1237

STOPPING AIR POLLUTION AT ITS SOURCE

CAP

Clean Air Program

Draft Regulation
Appendices 1 & 2

Environment
Environnement

CAP

Clean Air Program

Draft Regulation

APPENDICES 1 and 2

August 1990

PREFACE

In November 1987, the Ministry of the Environment released a discussion paper on a new Clean Air Program for Ontario entitled "Stopping Air Pollution at its Source." During a 90-day comment period a series of public and special interest group meetings were held throughout the Province and wide-ranging written submissions were made to the Minister.

The Draft Regulation of the Clean Air Program contains an overview document accompanied by several appendices which describe procedures and protocols in detail. The appendices are referenced and described below and in each volume. Copies of the documents can be obtained separately or as a package from:

Environment Ontario
Public Information Centre
135 St. Clair Avenue West
Toronto, Ontario
M4V 1P5

Telephone Number (416) 323-4321

These materials will be subject to a 180-day review period during which interested parties are invited to make submissions to the Minister. Following the review period the Ministry will take account of these comments and produce a revised Draft Regulation prior to filing a final Draft Regulation with the Registrar of Regulations.

Summary of CAP Documentation

The Clean Air Program Draft Regulation outlines the Ontario Ministry of the Environment's proposals for regulating stationary air emission sources in the Province. The contents of the Draft Regulation are presented in an overview document and three volumes of appendices. An additional volume summarizes the comments received by the Ministry on its 1987 Discussion Paper - "Stopping Air Pollution At Its Source." In order to assist in the reading of the documents the following summary of the contents of the various volumes is presented:

Draft Regulation Overview:

In this volume the key elements of the Clean Air Program are identified, and the way in which the Ministry is proposing that they should be integrated into a new regulatory package is specified.

Responses to Public Comments:

Comments received at public meetings, meetings with special interest groups, an open workshop, and in submissions to the Minister as a result of the Discussion Paper are summarized, and references are provided as to how and where the comments have been incorporated into the Draft Regulation or reasons are supplied as to why this has not been possible.

Appendices 1 and 2

Appendix 1 - **DEFINITIONS**

Technical terms used in the overview document and in the other appendices are defined to facilitate the interpretation of these documents.

Appendix 2 - **SOURCE REGISTRATION**

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The purpose and intent of the proposed source registration scheme are identified.

Appendix 2-2 - **SOURCE REGISTRATION LEGISLATION**

The anticipated scope of the proposed source registration scheme is outlined. The applicability of source registration, and the requirements on owners and operators, including thresholds, the proposed treatment of mixtures and trade names, and proposed exemptions are identified.

Appendix 2-3 - **LISTS OF CHEMICAL SUBSTANCES FOR SOURCE REGISTRATION**

The list of chemicals which owners or operators will be required to consider when filing a source registration statement is provided. This list is presented (1) in alphabetical order, (2) by CAS number order with synonyms, and (3) by synonyms in alphabetical order.

Appendix 2-4 - **CANADIAN STANDARD INDUSTRIAL CLASSIFICATION CODES**

A listing of the Canadian Standard Industrial Classification Codes accompanies the Lists of Chemical Substances for Source Registration which it is proposed should be dealt with in the initial phase, the second phase and the third phase.

Appendix 2-5 - **SAMPLE REGISTRATION FORM**

A sample registration form is provided.

Appendix 2-6 - **SAMPLE INSTRUCTIONS**

A sample of the instructions (from U.S E.P.A. SARA Title III Section 313) is supplied.

Appendix 2-7 - **SAMPLE EMISSION CROSS-REFERENCE**

A sample of the Emission Cross-Reference and Section 313 Final Rule (which includes a sample method for estimating releases) is provided.

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Appendix 3 - **IMPLEMENTATION OF THE CLEAN AIR PROGRAM**

The manner in which it is proposed to implement the Clean Air Program is provided.

Appendix 4 - **APPROVALS**

The details of the proposed approvals mechanisms under the Clean Air Program are provided.

Appendix 4-1 - **APPROVALS PROCESS**

The proposed requirements of the Ministry's air approvals process, under which certificates of approval to construct and operate will be issued, are specified together with basic information requirements for the process, and the manner in which it is proposed the process should operate.

Appendix 4-2 - **GENERIC CERTIFICATES OF APPROVAL**

The proposals to handle the granting of certificates of approval to sources which have minor impact on the environment, and have common characteristics which permit generic or class control limitations to be employed, are itemized. An example based on US state regulations for dry cleaning establishments is appended.

Appendix 4-3 - **EXPERIMENTAL FACILITIES**

Proposed measures for handling pilot plants, laboratories and prototypes are identified.

Appendix 5 - **SMALL AND SPECIAL SOURCES**

The Ministry's proposals for handling the approval of small and special sources are described.

Appendix 5-1 - **SMALL SOURCE DESIGNATION LIMITS**

The Ministry's suggested methodology for defining small sources, exempt from control technology requirements, is provided, accompanied by a list of suggested small source designation limits for chemicals included in the source registration process.

Appendix 5-2 - **CODES OF PRACTICE - CONCEPTUAL OUTLINE**

Codes of Practice are suggested as a mechanism for handling the regulation of certain types of sources. These include sources not amenable to conventional control technologies, defined as necessary or unavoidable and/or conducted infrequently or for short time periods at a particular location. The general conditions which will be included in codes of practice and a sample for open burning are provided.

Appendix 6 - **CONTAMINANT CLASSIFICATION PROCESS AND AIR QUALITY STANDARDS**

The methodologies which are proposed for the contaminant classification process and the setting of air quality standards are discussed.

Appendix 6-1 - **OVERVIEW: CLASSIFICATION, REGULATORY STRATEGIES AND AIR QUALITY STANDARDS**

The role of classification and air quality standards in the Clean Air Program; definition of a target list of chemicals; the classification methods which will be used; features of the "interim classification" system, including a so-called "public participation in classification process"; and the general characteristics of the proposed system for defining regulatory strategies, criteria and standards are summarized.

Appendix 6-2 - **THE CLEAN AIR PROGRAM (CAP) GENERIC CLASSIFICATION PROCESS**

The types of information which will be considered in the process of classifying contaminants are identified.

Appendix 6-3 - **INTERNAL MINISTRY OF THE ENVIRONMENT CHEMICAL LEVEL-OF-CONCERN CLASSIFICATION PROCESS**

Details of the proposed Ministry of the Environment process for classifying contaminants are supplied. Three methods are identified: development of (1) "detailed" or (2) "preliminary" dossiers together with the use of the MOE detailed scoring system; (3) and the use of various jurisdictional and property information.

Appendix 6-4 - **LIST OF CONTAMINANTS CLASSIFIED ON THE BASIS OF LEVEL-OF-CONCERN**

Included in this Appendix are an "interim" classification of contaminants listed as emissions in certificates of approval over recent years, and priority chemicals believed to be in use in Ontario which have been identified under the Canadian Environmental Protection Act or by other recognized jurisdictions as being of concern.

Appendix 6-5 - **PART 1: PUBLIC PARTICIPATION IN THE CLASSIFICATION PROCESS**

The process whereby the public, industry, and interested parties will be able to contribute to the classification of contaminants, is detailed.

Appendix 6-5 - **PART 2: CHEMICAL DOSSIERS**

Details of the requirements concerning the submission chemical dossiers are supplied, together with a manual describing the Chemical Evaluation Search and Retrieval System (CESARS) written by the Michigan Department of Natural Resources as part of a joint effort with the Province of Ontario.

Appendix 6-6 - **REGULATORY STRATEGIES: THE DECISION PROCESS**

A three-tier approach which the Ministry of the Environment is considering in order to produce air quality standards and chemical specific regulatory strategies is discussed.

Appendix 6-7 - **INTERIM AIR QUALITY STANDARDS**

The values which the Ministry is proposing to use in connection with the new modelling package in evaluating applications for certificates of approval are supplied. The lists are arranged according to the averaging period which will be used: 24 hour; 1 hour; 10 minute; irregular averaging times; and 1 year.

Appendix 7 - **EMISSION LIMITS AND APPROVALS**

The Ministry's proposed mechanisms for setting and listing emission limits for use in the certificate of approval process are provided.

Appendix 7-1 - **EMISSION LIMITS**

The emission limits for various processes which the Ministry is proposing should be appended to a final draft regulation and used in the certificate of approval process are discussed.

Appendix 7-2 - **GUIDELINE FOR DETERMINATION OF EMISSION LIMITS**

The policies and requirements of the Ontario Ministry of the Environment used in setting emission limits under the Clean Air Program are documented.

Appendix 7-3 - **THE EMISSION LIMIT-SETTING PROCESS**

The process for setting emission limits is outlined.

Appendix 7-4 - **REQUIREMENTS FOR UPSETS, START-UPS, SHUTDOWNS AND BYPASSES**

The conditions under which by-passing of air pollution control systems are not permitted are identified.

Appendix 7-5 - **VISIBLE EMISSIONS**

The Ministry's proposals concerning visible emissions are provided together with U.S. E.P.A. Regulations on Standards of Performance for New Stationary Sources which will be used as a basis for proposed regulatory changes.

Appendix 7-6 - **PUBLIC CONSULTATION PROVISIONS**

Proposed avenues for public discussion of emission limit setting and the issuance of certificates of approval are identified.

Appendices 8-11

Appendix 8 - **AIR QUALITY MODELLING**

An overview of the dispersion modelling requirements associated with the certificate of approval process is provided, including the manner in which the modelling should be applied.

Appendix 8-1 - **A GENERAL USER'S GUIDE FOR SOURCE ASSESSMENT**

Details of the requirements concerning modelling are supplied.

Appendix 8-2 - **DETAILED DESCRIPTION OF THE FULL MULTI-SOURCE AIR QUALITY MODELLING TECHNIQUE FOR CALCULATION OF LOCAL AIR CONCENTRATIONS**

The modelling package which the Ministry is proposing is described in detail complete with equations.

Appendix 8-3 - **MODELLING SCHEDULE - METHODOLOGY FOR THE DETERMINATION OF METEOROLOGICAL PARAMETERS REQUIRED FOR THE FULL AIR QUALITY MODEL CALCULATIONS.**

The process for determining the meteorological inputs to the dispersion models is described.

Appendix 8-4 - **A USER'S GUIDE TO THE AIR QUALITY MODELLING SOFTWARE**

A guide is provided to facilitate the running of the computer programs associated with the dispersion modelling package.

Appendix 8-5 - **SUPPLEMENTARY CONTROL PROGRAMS**

The conditions under which the Ministry is proposing that supplementary control programs should be utilized under CAP are identified.

Appendix 9 - **SOURCE TESTING**

The general provisions which it is proposed should govern source testing programs under the revised regulatory structure are supplied.

Appendix 9-1 - **SOURCE TESTING CODE**

Ontario's source testing code, which is under revision, is referenced. It is proposed that the revised version of this code will be the standard reference for use with the revised regulation.

Appendix 9-2 - **SOURCE TESTING METHODOLOGIES IN OTHER JURISDICTIONS**

A list of reference test methods from the U.S., which it is proposed should be used in Ontario, is supplied.

Appendix 10 - **AMBIENT AIR MONITORING**

The general requirements concerning ambient air monitoring are identified.

Appendix 10-1 - **AMBIENT AIR MONITORING APPROVED SAMPLING AND ANALYTICAL METHODS**

The sampling and analytical methods approved by the Ministry for pre-operational and post start-up ambient air monitoring are summarized.

Appendix 10-2 - **ASSESSING THE IMPACT OF AIRBORNE CONTAMINANTS ON SOIL AND TERRESTRIAL VEGETATION**

The Ministry's methodology for evaluating the effect of airborne contaminants on soils and vegetation are detailed as a standard measuring/assessment technique.

Appendix 11 - **QUALITY ASSURANCE FOR THE CLEAN AIR PROGRAM**

The general quality assurance requirements under the Clean Air Program concerning: continuous ambient air monitoring activities; continuous source emission monitoring activities; discrete ambient air monitoring activities; and discrete source emission monitoring activities are discussed.

APPENDIX 1

APPENDIX 1-1

DEFINITIONS

Definitions

Act - the Environmental Protection Act, Revised Statutes of Ontario, 1980, Chapter 141, as amended.

Adverse Effect - one or more of:

i) impairment of the quality of the natural environment for any use that can be made of it;
ii) injury or damage to property or to plant or animal life;
iii) harm or material discomfort to any person;
iv) an adverse effect on the health of any person;
v) impairment of the safety of any person;
vi) rendering any property or plant or animal life unfit for use by man;
vii) loss of enjoyment of normal use of property; and
viii) interference with the normal conduct of business.

Air - open air not enclosed in a building, structure, machine, chimney, stack or flue.

Air Pollution Control Equipment - any device, equipment, process or combination thereof the operation of which would limit, capture, reduce, confine, or otherwise control air contaminants or convert for the purposes of control any air contaminant to another form, another chemical or another physical state.

Airshed Modelling - mathematical models used in accordance with Appendix 8 or equivalent models used to predict concentrations in the ambient air for all sources of contaminants in a defined area.

Air Quality Standard - the maximum allowable concentration of a contaminant in the ambient air.

Affected Facility - with reference to a stationary source, any part, equipment, facility, installation, apparatus, process or operation to which an emission limit is applicable or any other facility so designated.

Ambient Air - the air that surrounds the earth, excluding the general volume of gases contained within any building or structure.

Approval - an approval in the form of a certificate or letter issued by the Director to permit the construction and/or operation of the proposed works under the imposed terms and conditions.

Approved Operation - any air pollution control system shall be operated according to its design specifications whenever the source on which it is installed is in operation or is emitting air contaminants.

Background concentrations - the concentration, determined by monitoring or modelling, which is due to sources of atmospheric emissions other than the source in question. The background concentration can be determined from a mathematical model which includes all other sources impacting on the airshed, except for the source in question; or, from ambient measurements during the pre-startup period.

BACT-EA - Best Available Control Technology Economically Achievable; the lowest emission limit achievable by a source for each pollutant it emits, taking into account the overall cost-effectiveness of the available alternatives, potential for secondary emissions, impacts on environmental media other than air, and the economic status of the sector to which the source belongs. In evaluating the alternatives, controls used on sources with similar exhaust characteristics and innovative control technologies (defined below) are to be included in the comparison. The evaluation is to proceed in a top-down fashion, starting from the initial assumption that BACT-EA is in fact LAER (defined below) and justifying each step to a less stringent degree of control through analysis of the factors noted above. The specific technical or financial circumstances of a particular source are not taken into account in this determination.

Board - the Environmental Appeal Board.

Classification - grouping chemicals into three Levels-of-Concern, Level 1, 2 and 3; Level 1 being associated with the highest concern.

Clean Up - the restoration of a contaminated site to ensure the protection of human health and the environment. The decommissioning of facilities may or may not be associated with site clean up.

Codes of Practice - outlines of the procedures and where available the necessary control technologies for limiting emissions from such activities as open burning and construction and maintenance which are necessary, unavoidable, have short term impacts and are not required to obtain a certificate of approval due to the existence of the code of practice.

Collection Efficiency - the overall performance of the air cleaning device in terms of ratio of material collected to total input to the collector, unless specific size fractions of the contaminant are stated or required.

Commenced - that time when an owner or operator has undertaken a continuous program of construction or that an owner or operator has entered into a binding agreement or contractual obligation to undertake and complete within a reasonable time a continuous program of construction.

Community Air Quality Standards (AQS's) - ambient air concentrations, with appropriate averaging times, which cannot be exceeded anywhere in the community.

Complete Certificate of Approval Application - an application for an approval which contains all the information necessary for processing the application. Designating an

application complete for purposes of permit processing does not preclude the Ministry from requesting or accepting any additional information.

Compliance Schedule - the date or dates by which a source or category of sources is required to comply with the standards of the regulation.

Compliance Testing - determination if the actual discharge rate of contaminant(s) are in compliance with Ministry standards by performing source sampling and analysis and/or continuous emission monitoring in accordance with Ministry requirements.

Construction - fabrication, erection, installation, or relocation of a stationary source, including but not limited to temporary installations and portable stationary sources.

Contaminant - any solid, liquid, gas, odour, heat, sound, vibration, radiation or combination of any of them resulting directly or indirectly from human activities that may cause an adverse effect.

Criteria Pollutant - any pollutant for which an air quality standard is established.

Decommission and Decommissioning - the mothballing, partial or complete closure of facilities.

Director - the Director, appointed by the Minister of the Environment in accordance with Section 4(1) of the Act.

Emission - any contaminant (as defined above) which makes its way into the air.

Emission Limit - The maximum allowable mass of emissions of a contaminant to the air in a given time period or per unit of production/input.

Establishment - an economic unit, generally at a single physical location, where business is conducted or where services or industrial operations are performed.

Existing Source - means any stationary source which is in existence on the effective date of the regulation.

Experimental Facilities - pilot plants, laboratories and prototypes.

Facility - all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites. A facility may contain more than one establishment.

Fugitive Emissions - emissions which escape into the atmosphere by some route or means other than through a stack, duct, hood, flue, or other conduit.

Generic Approval - an approval for sources meeting certain requirements for which a simplified evaluation may be performed due to the existence of a pre-assessment which

indicates that those requirements will result in an environmentally acceptable operation. The approval is given in the form of a certificate or letter issued by the Director of the regional office having jurisdiction in environmental matters for the geographic area in which the works will be constructed and operated under the imposed terms and conditions.

Innovative Control Technology - any system of air pollution control that has not been extensively demonstrated in practice, but would have a substantial likelihood of achieving greater continuous emissions reduction than any control system in current practice or achieving at least comparable reductions at lower cost in terms of energy, economics, secondary emissions potential or environmental impacts other than on air quality.

Installation - the placement, assemblage or construction of equipment or control apparatus at the premises where the equipment or control apparatus will be used, including all preparatory work at such premises other than land clearing and grading.

LAER: Lowest Achievable Emission Rate; the most stringent emission limit set out (in a regulation or permit/approval) in any competent jurisdiction in the world (unless it is shown to unachievable) or the lowest emissions any source with similar exhaust characteristics has achieved in practice. In evaluating similar sources, innovative controls with a reasonable expectation of success in application to the subject source are not to be ruled out.

Level 1 Control Limit - emission limit set using LAER as the starting point, but weighing the net environmental benefit of an identified control option before establishing the emission level corresponding to it as the Level 1 Control Limit. Alternatives identified while searching for the controls yielding LAER performance would be assessed in terms of effectiveness in reducing emissions of all emitted contaminants, potential secondary emissions to air, and effects in other media.

Level 2 Emission Limit - emission limit set using LAER as the starting point for a top-down analysis (i.e., working from the most stringent option toward the least) corresponding to the considerations for BACT-EA. The analysis would examine available alternatives, weighing the net environmental benefit and the overall cost-effectiveness of each alternative before establishing the option under curren ōt consideration as the Level 2 Control Limit. The effectiveness of the option at reducing emissions of all emitted contaminants, potential secondary emissions to air, and effects in other media would be considered in weighing net environmental benefit. The overall cost-effectiveness of each option would be assessed in terms of the ability of the sector employing such sources to bear those costs of control, without specific consideration of individual facility circumstances.

Level 3 Emission Limit - emission limit set using the philosophy underlying RACT, i.e., taking into account technological and economic feasibility on a site-specific basis. Issues of site specifics would be relevant to establishing cost values for assessing overall cost-effectiveness and the financial factors affecting maximum costs of control the owner or operator could bear. The intent would still be to conduct a top-down assessment, but the search for alternatives need not take into account innovative control technologies, and

where there is sufficient data for North American facilities a world-wide search need not be undertaken.

Malfunction - any sudden and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in the manner or for the purpose for which it is designated. Excess emissions during periods of routine start-up and shut-down of process equipment are not considered to be a malfunction nor are failures caused entirely or in part by poor maintenance, careless operations or any other upset condition within the control of the emission.

Ministry - the Ministry of the Environment

Modification - any physical or operational change to any machine, equipment, device, article or facility, except for the following:

(a) Routine maintenance, repair, and replacement of any machine, equipment, device, article of facility or parts.

(b) Increase in production rate, if such increase does not exceed the operating design capacity of the affected facility and the maximum operating capacity specified as a condition.

(c) Increase in hours of operation up to the maximum hours allowed in an operating or construction approval.

(d) Use of an alternative fuel or raw material if the machine, equipment, device, article or facility was designed and approved to accommodate that alternative use.

Modifying Factors - represent additional compelling information and expert judgement which may justify an enhanced or diminished Level-of-Concern

New Source - any stationary source, the construction or modification of which is commenced after the adoption of the revised regulation.

Open Burning - the combustion of material in an open fire or in an outdoor container without providing for the control of combustion or emissions from the burning.

Owner or Operator - any person who owns, leases, manages, operates, has charge of, controls or supervises a source of a contaminant.

Performance Test - a test for determining emissions from new or modified sources.

Phasing Out - refers to the permanent cessation of use of a piece of process equipment.

Planetary Boundary Layer - the region of the atmosphere which is nearest to the ground and where the atmospheric mixing is directly affected by the presence of the surface.

Point Source - any source where the emission is collected or contained prior to release.

Pollutant - same as a contaminant as defined above.

Potential to Emit - the maximum capacity of a stationary source to emit a pollutant, excluding secondary emissions, under its physical or operational design unless limited by the conditions of an approved construction and operating permit.

Prescribed Burning - is the knowledgeable application of fire to a specific land area to accomplish predetermined forest management or other land use objectives.

Prevention - to meet or satisfy in advance.

Process Unit - any single process or piece of process equipment.

Qualifying Factors - various scores and score combinations used to 'trigger' the contaminant to a particular Level-of-Concern

RACT - Reasonably Available Control Technology; the lowest emission limit a particular source is capable of meeting by the application of control technology that is reasonably available considering both technological and economic feasibility. Site specific factors such as source configuration, retrofit feasibility, operating procedures, raw materials characteristics and other technical or economic considerations may be taken into account. Technology-forcing options going beyond "off the shelf" equipment may be mandated by the analysis.

Radius of Influence (of a facility) - the distance to which the combination of all sources on a facility could exceed 5% of the air quality standard (shortest averaging time standard for the pollutant). The maximum radius of influence is 25 km and the minimum radius of influence is 1 km.

Receptor monitoring - the use of a receptor such as vegetation, soil or snow to determine the levels of target contaminants (in the receptor) prior to, and after, the onset of source operation.

Regulatory Strategies - multi-facetted control strategies which may include the optimization of controls, codes of practice, education, interjurisdictional initiatives to select the most efficacious control options (e.g. province-wide or in overloaded airsheds), in order to ensure that community air quality is improved, using impact analysis techniques.

Run - the net period of time during which a source sample of emissions is collected. Unless otherwise specified, a run may be either intermittent or continuous.

Schedule of Compliance - a schedule or timetable which clearly sets out in detail the steps to be taken in achieving the objectives of a regulation or standard.

Scheduled Maintenance - that maintenance which is planned by the management of a stationary source, or any part thereof, and which is anticipated at least 1 month in advance.

Scheduled Repair - scheduled repair means the repair of a stationary source, or any part thereof, which occurs within 1 month of discovery of the need for the repair and which is not a part of scheduled maintenance.

Secondary Emissions - emissions which occur as a result of the construction or operation of a major stationary source or major modification, but do not come from the major stationary source or major modification itself. Secondary emissions must be specifically identified, well defined, quantified to the degree of accuracy possible and their impact evaluated just as for the primary stationary source or modification. Secondary emissions include emissions from any off-site support facility which would not be constructed or increase its emissions except as a result of the construction or operation of the major stationary source or major modification. Secondary emissions may include emissions which come from a mobile source, such as emissions from the tailpipe of a motor vehicle, from a train or from a vessel where these form a regular part of the facility's routine operations.

Shut-down - means the cessation of operation of any pollution control equipment process or process equipment other than routine phasing out of process units.

Source - an individual point of emission, or a process or area from which emissions originate. Where several differing processes giving rise to distinct mixtures of pollutants discharge to a common stack, the originating equipment or activity is the source, not the common stack. This definition includes sources of fugitive emissions.

Standard Operating Procedure - a formal written procedure officially adopted by a plant owner or operator and available on a routine basis to those persons responsible for carrying out the procedure.

Start-up - means the commencement of operation of any source which has shut-down or ceased operation for a period of time sufficient to cause temperature, pressure, process, chemical, or pollution control device imbalance which would result in excess emissions.

Supplementary Control Program - a program under which (a) source(s) reduce emissions during meteorological conditions which could produce concentrations of contaminants in the ambient air in excess of air quality standards (see Appendix 8-5).

Technology Review - a report prepared by the proponent and reviewed by the Ministry stating proposed emission limits for the contaminants being or to be emitted from a source seeking approval, including supporting information and rationale on the control alternatives and their corresponding emission limits.

Uncombined Water - any water droplets or water vapour condensate that does not contain any other solid or liquid particulate matter attached to the water droplets.

Use - means any application, whether primary or secondary to the main facility operation, which may result in an air release of a listed substance.

Violation - Failures that are caused by poor maintenance, careless operation or any other preventable upset condition, or preventable equipment breakdown shall not be considered malfunctions, and shall be considered in violation of the emission limit exceeded.

APPENDIX 2

SOURCE REGISTRATION

APPENDIX 2-1

SOURCE REGISTRATION RATIONALE

APPENDIX 2-I

SOURCE REGISTRATION RATIONALE

INTRODUCTION:

Source Registration was not explicitly considered in the discussion paper issued in November 1987 by the Ontario Ministry of the Environment which proposed a new Clean Air Program (CAP). As staff of the Air Resources Branch worked on the details of the Clean Air Program they realized in early 1989 that some form of emission inventory was vital to support this program. Staff representatives from each Branch and the Regions of OME, and the Health Studies Service of the Policy and Regulation Branch of the Ministry of Labour, which might have an interest in source registration were invited to participate on a working group which had its initial meeting on June 1, 1989. As a result of their deliberations and the work of individuals associated with it the following rationale was developed.

In summary, Source Registration will require stationary sources to report their releases of specified substances (about 400 contaminants) to all three environmental media, air, land, and water. Each facility will have to report these releases on an annual basis within 6 months of the end of the year. A three year phase-in with the larger facilities reporting first is proposed. The main purpose of Source Registration is to establish an information base of actual releases to the environment so that the effectiveness of the Clean Air Program which is aimed at eliminating or reducing the release of toxic air pollutants at their source, can be assessed. Information on all three media is necessary to ensure that progress in air pollution is not being achieved at the expense of land or water pollution. This approach is necessary to properly manage the environment.

It is proposed that source registration requirements be incorporated into the Clean Air Program. The requirements for source registration are quite complex and will need to be supported by many technical guidance documents and instructions for the proper completion of the registration forms. These source registration requirements are similar to the U.S. E.P.A. SARA Title III Section 313 Toxic Chemical Release Inventory legislation, although some reporting aspects of the California Air Resources Board "Air Toxics "Hot Spots" Information and Assessment Act" have been incorporated. Based on estimates from the United States, it will cost a facility approximately $15,000. to comply with the source registration requirements.

There will be many direct benefits from source registration. The data collected under these provisions will provide the Ministry with the necessary information to track the success of control measures, indicate remaining, new or potential problem areas, determine major sources for the purposes of regional air quality modelling and demonstrate the true extent of environmental trade-offs. For the public, free access to the source registration database will provide them with important information about the state of the environment in their community, and acknowledge their concerns for environmental improvement. For industry, a comprehensive inventory of all releases to the environment will allow them to assess the effectiveness of their control programs and provide them with a forum to publicize their successes in this area.

PURPOSE AND INTENT:

The purpose of source registration is to identify sources of releases of specified substances into the environment and for significant sources to quantify the releases to each of the three environmental media, air, water, and land, on an annual basis.

The intent of this legislation is to establish a comprehensive information base of the sources and amounts of releases of contaminant substances to each of the three environmental media. In this context releases means the total amount actually released and is the sum of both accidental and routine releases from a facility for a one-year period. The reports from covered facilities will be filed with the Ministry of the Environment within six months of the end of the year.

PHASE-IN & APPLICABILITY:

Source Registration will be phased-in over a three year period using facility size and Standard Industrial Classification (SIC) code as the basis. In addition the actual quantities released must be reported by a facility for each specified chemical substance which is manufactured, imported, processed, or otherwise used in excess of 5,000 kilograms (11,000 lbs.), otherwise the substance must only be identified. In the first year, only facilities with 100 or more employees (based on 2000 hours per employee per year) and in the specified SIC code will have to report. In the second year, facilities with 25 or more employees and in the specified SIC code will have to report. In the third year, facilities with 5 or more employees and in the specified SIC code will have to report.

APPENDIX 2-2

SOURCE REGISTRATION LEGISLATION

APPENDIX 2-2

SOURCE REGISTRATION LEGISLATION

1. PURPOSE AND INTENT:

The purpose of this chapter is to identify sources of releases of specified substances into the environment and for significant sources to quantify their actual releases to each of the three environmental media, air, water, and land, on an annual basis.

The information collected is intended to enable the assessment of the effectiveness of the Clean Air Program, to inform the general public about releases of pollutants into the environment, to aid in the development of regulations, guidelines and standards, to assist research and for other purposes.

2. DEFINITIONS:

"**Pollutant**" means a substance (odour, gas, vapour, liquid or solid) which is released from any single source or in combination with other sources and is present in outdoor air, water or land in quantities which are or may be predicted with reasonable certainty to be, injurious to human, plant or animal life or property, or which unreasonably interferes with the proper enjoyment of the property of others throughout the province of Ontario.

"**Environment**" means any or all of the three media: air, water or land.

"**Source**" means any person or property, real or personal, which contributes to pollution of the environment.

"**Person**" means any individual, group of individuals, firm, partnership, voluntary association, or private, public or municipal corporation, or agency, bureau, department or an instrumentality of federal, provincial or municipal government responsible for the use of property.

"**Emission**" means any substance, other than water in an uncombined form, discharged directly or indirectly into outdoor air, water or land.

"**M.O.E.**" means the Ontario Ministry of the Environment.

"**Establishment**" means an economic unit, generally at a single physical location, where business is conducted or where services or industrial operations are performed.

"**Facility**" means all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites. A facility may contain more than one establishment.

"**Manufacture**" means to produce, prepare, import or compound a chemical substance including coincidental production of a chemical substance as a by-product o ōr impurity during the manufacture, processing, use or disposal of any other chemical substance or mixture.

"**Process**" means the preparation of a manufactured chemical substance for distribution in commerce. A process can involve reactions that convert the chemical substance, actions that change the form or physical state of the chemical substance with other chemicals or substances, inclusion of the substance in an article, or the repackaging of the chemical substance.

"**Mixture**" means any combination of two or more chemicals, if the combination is not, in whole or in part, the result of a chemical reaction. However, if the combination was produced by a chemical reaction, but could have been produced without a chemical reaction, it is also treated as a mixture. A mixture also includes any combination which consists of a chemical and associated impurities.

"**Import**" means to cause a chemical to be brought into the province of Ontario.

"**Trade name product**" means a chemical or a mixture of chemicals that is distributed to other persons and that incorporates a chemical component that is not identified by the applicable chemical name or Chemical Abstracts Service Number.

"**SIC code**" means Canadian Standard Industrial Classification code number

"**CAS number**" means Chemical Abstracts Service Registry Number

"**Article**" means a manufactured item which: a) is formed to a specific shape or design during manufacture, b) has end use functions dependent in whole or in part upon its shape or design during end use, c) which does not release a chemical substance specified in **Appendix 2-3** under normal conditions of processing or use of that item at the facility or establishment.

"**Release**" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers and other closed receptacles) of any pollutant.

"**Full-time employee**" means 2000 hours per year of full-time equivalent employment. A facility would calculate the number of full-time employees by totalling the hours worked during the calender year by all employees including contract employees and dividing the total by 2000 hours.

"**Substance**" means any distinguishable kind of organic or inorganic matter, whether animate or inanimate, and includes :

a) any matter that is capable of being dispersed in the environment or of being transformed in the environment into matter that is capable of being so

dispersed or that is capable of causing such transformations in the environment,

b) any element or free radicle,

c) any combination of elements of a particular molecular identity that occurs in nature or as a result of a chemical reaction and

d) complex combinations of different molecules that originate in nature or are the result of chemical reactions but that could not practicably be formed by simply combining individual constituents,

e) any mixture that is a combination of substances and does not itself produce a substance that is different from the substances that were combined,

f) any manufactured item that is formed into a specific physical shape or design during manufacture and has, for its final use, a function or functions dependent in whole or in part on its shape or design, and

g) any animate matter that is, or any complex mixtures of different molecules that are, contained in effluents, emissions or wastes that result from any work, undertaking or activity.

"**Use**" means any application, whether primary or secondary to the main facility operation, which may result in an air release of a listed substance.

"**Otherwise Use**" means any use of a specified chemical substance that is not covered by the terms "manufacture" or "process" and includes use of a specified chemical substance contained in a mixture or a trade name product. Relabelling or redistributing a container of a specified chemical substance where no repackaging of the specified chemical substance occurs does not constitute use or processing of the specified chemical substance.

3. REGULATION:

3.1 Applicability:

All owners and operators of facilities which contribute to pollution of the environment must register with M.O.E. in accordance with the requirements specified below. If the owner and operator of a facility are different persons, only one is required to register with M.O.E. If a facility is not registered, M.O.E. will hold both the owner and the operator liable.

On the date that source registration takes effect (1st year), any facility which manufactures, processes, imports, uses or releases any substance listed in **Appendix 2-3**, or any other substance which reacts to form a listed substance, must be registered with M.O.E. if the facility meets the following criteria:

a) the facility has 100 or more full-time employees

b) the facility is within the Standard Industrial Classification codes which are specified in **Appendix 2-4** for year 1.

Effective [date of 2nd period], this same registration requirement applies to any facility which meets the following criteria:

a) the facility has 25 or more full-time employees

b) the facility is within the Standard Industrial Classification codes which are specified in **Appendix 2-4** for year 2.

Effective [date of 3rd year] and for subsequent years, this same registration requirement applies to any facility which meets the following criteria:

a) the facility has 5 or more full-time employees

b) the facility is within the Standard Industrial Classification codes which are specified in **Appendix 2-4** for year 3 and subsequent years.

3.2 Requirements:

An owner or operator must submit to M.O.E. a completed Source Registration report for each facility which meets the requirements of section 3.1., in accordance with the instructions in **Appendix 2-6**. Each substance specified in **Appendix 2-3**, which is manufactured (including imported), processed, used in, or released by the facility must be identified.

Each report for activities involving a specified chemical substance that occurs at a facility during a calendar year must be submitted on or before June 30 of the following year.

A. Threshold quantities:

The owner or operator of a facility shall determine and report the quantity of releases (both internally and accidentally) to each of the three environmental media; air, water, and land, of any substance listed in **Appendix 2-3** and manufactured (including imported), processed or otherwise used in excess of **5000 kg (11,000 lbs)** during each calender year.

When a facility manufactures, processes, or otherwise uses more than one member of a chemical category listed in **Appendix 2-3**, and the total quantity of the combined amounts of the members of the chemical category exceeds 5000 kg (11,000 lbs), the owner or operator of the facility must determine and report the total quantity released to each of the three environmental media; air, water and land.

B. Mixtures and Trade Names:

1) A person is required to report any chemical substance specified in **Appendix 2-3**, present as a component of a mixture or trade name product received from another person. This applies to any specified chemical substance which is imported, processed, or otherwise used at the facility by the owner or operator in excess of an applicable threshold quantity as part of that mixture or trade name product.

2) To determine whether a chemical substance, which is a component of a mixture or trade name product, has been imported, processed, or otherwise used in excess of an applicable threshold at the facility, the owner or operator of a facility shall determine the following:

   a) If the owner or operator knows the specific chemical identity of a chemical substance and the specific concentration at which it is present in a mixture or trade name product, the owner or operator shall determine the weight of the chemical substance imported, processed or otherwise used as a part of the mixture or trade name product at the facility.

      This weight shall be combined with the weight of the chemical substance manufactured (including imported), processed or otherwise used at the facility other than as a part of the mixture or trade name product.

      If after combining the amounts, the owner or operator determines that the chemical substance was manufactured, processed or otherwise used in excess of an applicable threshold, the owner or operator shall report the specific chemical identity and all releases of the chemical substance on the **Source Registration** form in accordance with the instructions in **Appendix 2-6**.

   b) If the owner or operator knows the specific chemical identity of a chemical substance but does not know the specific concentration at which the chemical substance is present in a mixture or trade name product, the following applies:

      i) If the õowner or operator has been told the upper bound concentration of the chemical substance in the mixture or trade name product, the owner or operator shall assume that the chemical substance is present in the mixture or trade name product at that upper bound concentration.

      ii) The upper bound concentration shall be used by the owner or operator to determine whether the chemical substance has been manufactured, processed, or otherwise used at the facility in excess of an applicable threshold.

C. Time schedule for implementation:

[Date when this chapter becomes effective]

4. EXEMPTIONS:

A. Articles:

If a chemical substance is present in an article at a facility, the owner or operator is **not** required to consider the quantity of the chemical substance present in that article when determining the amount of release for reporting purposes.

This exemption applies whether the owner or operator received the article from another person or the person produced the article. However, this exemption applies only to the quantity of the chemical specified in **Appendix 2-3** present in the article.

If a chemical specified in **Appendix 2-3** is manufactured (including imported), processed, or otherwise used at the facility other than as part of the article, in excess of an applicable threshold quantity, then the owner or operator is required to report this under section 3.2. of this chapter.

Persons potentially subject to this exemption should carefully review the definitions of "article" and "release" in Section 2 of this document. If a release of a chemical substance occurs as a result of the processing or use of an item at the facility, that item does not meet the definition of "article".

B. Uses:

If a chemical substance is used at a facility for a purpose described in this section, a person is **not** required to consider the quantity of that chemical in determining whether the threshold has been met according to section 3.2.A or determining the amount of releases to be reported under section 3.2. of this chapter.

This exemption only applies to the quantity of chemical substance used for the purpose described in this paragraph. If the chemical substance is also manufactured (including imported), processed, or otherwise used at the facility other than as described in this paragraph, the person is required to report. Exemptions are as follows:

1) Use as a structural component of the facility.

2) Use of products for routine janitorial or facility grounds maintenance. (Examples: cleaners, fertilizers, pesticides similar in type and concentration to consumer products.

3) Personal use by employees or other persons at the facility of foods, drugs, cosmetics, or other personal items containing chemical substances including supplies of such products within a facility-operated cafeteria, store or infirmary.

C. Owners of leased property:

The owner of a facility is not subject to reporting under section 3.2 if the owner's only interest in the facility is ownership of the real estate upon which the facility is operated.

This exemption applies to owners of facilities such as industrial parks, all or part of which are leased to persons who operate establishments where the owner has no other business interest in the operation of the facility.

5. RECORD KEEPING:

Each person subject to this regulation must retain the following records for a period of five years from the date of submission of a report:

a) A copy of each report submitted by the person.

b) All supporting materials and documentation used by the person to determine that they are subject to source registration.

APPENDIX 2-3

LISTS OF CHEMICAL SUBSTANCES FOR SOURCE REGISTRATION

APPENDIX 2-3a

LIST OF CHEMICAL SUBSTANCES FOR SOURCE REGISTRATION
(in alphabetical order)

APPENDIX 2-3a

LIST OF CHEMICAL SUBSTANCES FOR SOURCE REGISTRATION (in alphabetical order)

C A S #	CHEMICAL NAME
75 -07-0	Acetaldehyde
60 -35-5	Acetamide
64 -19-7	Acetic Acid
67 -64-1	Acetone
75 -05-8	Acetonitrile
98 -86-2	Acetophenone
53 -96-3	Acetylaminofluorene, 2-
74 -86-2	Acetylene
107 -02-8	Acrolein
79 -06-1	Acrylamide
79 -10-7	Acrylic acid
107 -13-1	Acrylonitrile
309 -00-2	Aldrin
	Alkyltoluene Sulphonamide, n-
107 -05-1	Allyl chloride
7429 -90-5	Aluminum
1344 -28-1	Aluminum oxide
117 -79-3	Aminoanthraquinone, 2-
60 -09-3	Aminoazobenzene, 4-
92 -67-1	Aminobiphenyl, 4-
82 -28-0	Amino-2-methylanthraquinone, 1-
7664 -41-7	Ammonia
12125 -02-9	Ammonium chloride
6484 -52-2	Ammonium nitrate (solution)
7783 -20-2	Ammonium sulphate
	Amyl acetate, n-
	Amyl Acetate, secondary
62 -53-3	Aniline
90 -04-0	Anisidine, ortho-
104 -94-9	Anisidine, p-
134 -29-2	Anisidine hydrochloride, ortho-
120 -12-7	Anthracene
7440 -36-0	Antimony and compounds
7440 -38-2	Arsenic and compounds
7784 -42-1	Arsine

CAS #	CHEMICAL NAME
1332-21-4	Asbestos
7440-39-3	Barium-total water soluble
98-87-3	Benzal chloride
55-21-0	Benzamide
71-43-2	Benzene
92-87-5	Benzidine
98-07-7	Benzoic trichloride
95-16-9	Benzothiazole
98-88-4	Benzoyl chloride
94-36-0	Benzoyl peroxide
205-99-2	Benzo[b]fluoranthene
205-82-3	Benzo[j]fluoranthene
205-08-9	Benzo[k]fluoranthene
100-44-7	Benzyl chloride
56-55-3	Benz[a]anthracene
7440-41-7	Beryllium and compounds
92-52-4	Biphenyl
111-44-4	Bis(2-chloroethyl) ether
108-60-1	Bis(2-chloro-1-methylethyl) ether
103-23-1	Bis(2-ethylhexyl) adipate
542-88-1	Bis(chloromethyl) ether
	Borax
	Boric acid
7440-42-8	Boron
10294-33-4	Boron tribromide
10294-34-5	Boron trichloride
7637-07-2	Boron trifluouride
314-40-9	Bromacil
7726-95-6	Bromine
75-25-2	Bromoform
106-99-0	Butadiene, 1,3-
71-36-3	Butanol, n-
123-86-4	Butyl acetate, n-
141-32-2	Butyl acrylate
78-92-2	Butyl alcohol, sec-
75-65-0	Butyl alcohol, tertiary-
85-68-7	Butyl Benzyl phthalate
123-95-5	Butyl Stearate
106-88-7	Butylene oxide, 1,2-
123-72-8	Butyraldehyde
7440-43-9	Cadmium and compounds

CAS #	CHEMICAL NAME
75 -20-7	Calcium carbide
156 -62-7	Calcium cyanamide
592 -01-8	Calcium cyanide
1305 -62-0	Calcium hydroxide
1305 -78-8	Calcium oxide
130 -06-2	Captan
63 -25-2	Carbaryl
1333 -86-4	Carbon black
75 -15-0	Carbon disulphide
630 -08-0	Carbon monoxide
56 -23-5	Carbon tetrachloride
463 -58-1	Carbonyl sulphide
120 -80-9	Catechol
133 -90-4	Chloramben
57 -74-9	Chlordane
7782 -50-5	Chlorine
10049 -04-4	Chlorine dioxide
79 -11-8	Chloroacetic acid
532 -27-4	Chloroacetophenone
510 -15-6	Chlorobenzilate
75 -45-6	Chlorodifluoromethane
75 -00-3	Chloroethane
67 -66-3	Chloroform
107 -30-2	Chloromethyl methyl ether
	Chlorophenol
	Chlorophenoxy herbidices
126 -99-8	Chloroprene
1897 -45-6	Chlorothalonil
7440 -47-3	Chromium - di-, tri- and hexavalent forms
77 -92-9	Citric acid
8007 -45-2	Coal tar pitch volatiles - soluble fraction
7740 -48-4	Cobalt
7440 -50-8	Copper
120 -71-8	Cresidine, p-
108 -39-4	Cresol, m-
95 -48-7	Cresol, o-
106 -44-5	Cresol, p-
1319 -77-3	Cresols
98 -82-8	Cumene
80 -15-9	Cumene hydroperoxide
135 -20-6	Cupferron
506 -77-4	Cyanogen chloride

C A S #	CHEMICAL NAME
CYCLO SOL	Cyclo sol 63
110 -82-7	Cyclohexane
4680 -78-8	C.I. Acid Green 3*
569 -64-2	C.I. Basic Green 4*
989 -38-8	C.I. Basic Red 1*
16071 -86-6	C.I. Brown 95*
1937 -37-7	C.I. Direct Black 38*
2602 -46-2	C.I. Direct Blue 6*
2832 -40-8	C.I. Disperse Yellow 3*
81 -88-9	C.I. Food Red 15*
3761 -53-3	C.I. Food Red 5*
3118 -97-6	C.I. Solvent Orange 7*
842 -07-9	C.I. Solvent Yellow 14*
492 -80-8	C.I. Solvent Yellow 34*
97 -56-3	C.I. Solvent Yellow 3*
128 -66-5	C.I. Vat Yellow 4*
94 -75-7	D, 2,4-
127 -20-8	Dalapon sodium salt
50 29 3	DDT
17702 -41-9	Decaborane
1163 -19-5	Decabromodiphenyl oxide
124 -18-5	Decane, n-
872 -05-9	Decene, 1-
1395 -21-7	Detergent enzyme
123 -42-2	Diacetone alcohol
2303 -16-4	Diallate
615 -05-4	Diaminoanisole, 2,4-
39156 -41-7	Diaminoanisole sulphate, 2,4-
101 -80-4	Diaminodiphenyl ether, 4,4`-
95 -80-7	Diaminotoluene, 2,4-s
25376 -45-8	Diaminotoluene (mixed isomers)
333 -41-5	Diazinon
334 -88-3	Diazomethane
132 -64-9	Dibenzofuran
192 -65 0	Dibenzo[a,e]pyrene
189 -64 0	Dibenzo[a,h]pyrene
189 -55 9	Dibenzo[a,i]pyrene
191 -30 0	Dibenzo[a,l]pyrene
226 -36 8	Dibenz[a,h]acridine
53 -70 3	Dibenz[a,h]anthracene
224 42 0	Dibenz[a,jh]acridine

CAS #	CHEMICAL NAME
19287 -45-7	Diborane
106 -93-4	Dibromoethane, 1,2-
96 -12-8	Dibromo-3-chloropropane, 1,2-
84 -74-2	Dibutyl phthalate
77 -58-7	Dibutyltin dilaurate
131 -15-7	Dicapryl phthalate
541 -73-1	Dichlorobenzene, 1,3-
106 -46-7	Dichlorobenzene, 1,4-
95 -50-1	Dichlorobenzene, ortho-
25321 -22-6	Dichlorobenzene (mixed isomers)
91 -94-1	Dichlorobenzidine, 3,3-
75 -25-4	Dichlorobromomethane
107 -06-2	Dichloroethane, 1,2-
540 -59-0	Dichloroethylene, 1,,2-
542 -75-6	Dichloropropylene
1320 -37-2	Dichloro-1,1,2,2,-tetrafluoro ethane, 1,1-
120 -83-2	Dichlorphenol, 2,4-
62 -73-7	Dichlorvos
115 -32-2	Dicofol
1464 -53-5	Diepoxybutane
111 -42-2	Diethanolamine
84 -66-2	Diethyl phthalate (DEP)
64 -67-5	Diethyl sulphate
109 -89-7	Diethylamine
112 -34-5	Diethylene glycol monobutyl ether
124 -17-4	Diethylene glycol monobutyl ether acetate
111 -90-0	Diethylene glycol monoethyl ether
112 -12-5	Diethylene glycol monoethyl ether acetate
75 -71-8	Difluorodichloromethane
84 -75-3	Dihexyl phthalate (DHP)
108 -83-8	Diisobutyl ketone
119 -90-4	Dimethoxybenzidine, 3,3`-
124 -40-3	Dimethyl amine
624 -92-0	Dimethyl disulphide
115 -10-6	Dimethyl ether
57 -14-7	Dimethyl hydrazine, 1,1-
756 -79-6	Dimethyl methylphosphonate
105 -67-9	Dimethyl phenol, 2,4-
131 -11-3	Dimethyl phthalate
77 -78-1	Dimethyl sulphate
75 -18-3	Dimethyl sulphide
	Dimethylacetamide, n,n-

C A S #	CHEMICAL NAME
60 -11-7	Dimethylaminoazobenzene, 4-
108 -69-0	Dimethylaniline, 3,5-
121 -69-7	Dimethylaniline, n,n-
119 -93-7	Dimethylbenzidine, 3,3'-
79 -44-7	Dimethylcarbamyl chloride
109 -55-7	Dimethyl-1,3-diamino propane, n,n-
51 -28-5	Dinitrophenol, 2,4-
121 -14-2	Dinitrotoluene, 2,4-
606 -20-2	Dinitrotoluene, 2,6-
534 -52-1	Dinitro-o-cresol, 4,6-
117 -84-0	Dioctyl phthalate, n-
117 -81-7	Dioctyl phthalate
123 -91-1	Dioxane, 1,4-
646 -06-0	Dioxolane
22 -66-7	Diphenylhydrazine, 1,2-
122 -39-4	Diphenylamine
85 -00-7	Diquat dibromide - respirable
1886 -81-3	Dodecyl benzene sulphonic acid
24391 -00-3	Dodine
548 -73-2	Droperidol
106 -89-8	Epichlorohydrin
64 -17-5	Ethanol
110 -80-5	Ethoxyethanol, 2-
141 -78-6	Ethyl acetate
140 -88-5	Ethyl acrylate
100 -41-4	Ethyl benzene
541 -41-3	Ethyl chloroformate
60 -29-7	Ethyl ether
104 -76-7	Ethyl hexanol, 2-
84 -51-5	Ethylanthraquinone, 2-
74 -85-1	Ethylene
107 -21-1	Ethylene glycol
111 -76-2	Ethylene glycol butyl ether
1121 -71-2	Ethylene glycol butyl ether acetate
628 -96-6	Ethylene glycol dinitrate
110 -80-5	Ethylene glycol ethyl ether
111 -15-9	Ethylene glycol ethyl ether acetate
112 -25-4	Ethylene glycol monohexyl ether
75 -21-8	Ethylene oxide
96 -45-7	Ethylene thiourea
60 -00-4	Ethylenediaminetetraacetic acid

C A S #	CHEMICAL NAME
151 -56-4	Ethyleneimine
763 -69-9	Ethyl-3-ethoxy propionate
990 -73-8	Fentanyl citrate
1309 -37-1	Ferric oxide
2164 -17-2	Fluometon
7664 -39-3	Fluorides (as HF) - gaseous, during growing season
7664 -39-3	Fluorides (as HF) - total, during growing season
7664 -39-3	Fluorides (as HF) - total, during non-growing season
FLUORINERT	Fluorinert 3M-FC-70
50 -50-0	Formaldehyde
64 -18-6	Formic acid
98 -01-1	Furfural
98 -00-0	Furfuryl alcohol
8006 -61-9	Gasoline
111 -30-8	Glutaraldehyde
52 -86-8	Haloperidol
76 -44-8	Heptachlor
38998-75-3	Heptachloro dibenzofurans, H7CDFs
	1,2,3,4,6,7,8 Heptachloro dibenzofuran
	1,2,3,4,7,8,9 Heptachloro dibenzofuran
37871-00-4	Heptachloro dibenzo-p-dioxins, H&CDDs
	1,2,3,4,6,7,8 Heptachloro dibenzo-p-dioxin
118 -74-1	Hexachlorobenzene
77 -47-4	Hexachlorocyclopentadiene
55684-94-1	Hexachloro dibenzofurans, H6CDFs
	1,2,3,4,7,8 Hexachloro dibenzofuran
	1,2,3,6,7,8 Hexachloro dibenzofuran
	1,2,3,7,8,9 Hexachloro dibenzofuran
	2,3,4,6,7,8 Hexachloro dibenzofuran
34465-46-8	Hexachloro dibenzo-p-dioxins, H6CDDs
	1,2,3,4,7,8 Hexachloro dibenzo-p-dioxin
	1,2,3,6,7,8 Hexachloro dibenzo-p-dioxin
	1,2,3,7,8,9 Hexachloro dibenzo-p-dioxin
67 -72-1	Hexachloroethane
1335 -87-1	Hexachloronaphthalene
87 -68-3	Hexachloro-1,3-butadiene
999 -97-3	Hexamethyl disilazane
822 -06-0	Hexamethylene diisocyanate monomer
4035 -89-6	Hexamethylene diisocyanate trimer
680 -31-9	Hexamethylphosphoramide
110 -54-3	Hexane
107 -41-5	Hexylene glycol

C A S #	CHEMICAL NAME
302 -01-2	Hydrazine
10034 -93-2	Hydrazine sulphate
10035 -10-6	Hydrogen bromide
7647 -01-0	Hydrogen chloride
74 -90-8	Hydrogen cyanide
7664 -39-3	Hydrogen fluoride
7722 -84-1	Hydrogen peroxide
7783 -06-4	Hydrogen sulphide
123 -31-9	Hydroquinone
193 39 5	Indeno[1,2,3,cd]pyrene
15438 -31-0	Iron - metallic
	Isoamyl acetate
78 -83-1	Isobutanol
110 -19-0	Isobutyl acetate
97 -85-8	Isobutyl isobutyrate
78 -84-2	Isobutyraldehyde
108 -21-4	Isopropyl acetate
67 -63-0	Isopropyl alcohol
98 -82-8	Isopropyl benzene
80 -05-7	Isopropylidenediphenol, 4,4'-
7439 -92-1	Lead and compounds
	Lead in dustfall
58 -89-9	Lindane
7580 -67-8	Lithium hydrides
	Lithium - other than hydrides
1309 -48-4	Magnesium oxide
121 -75-5	Malathion
108 -31-6	Maleic anhydride
12427 -38-2	Maneb
7439 -96-5	Manganese compounds (as Mn) - including permanganates
	Manganese tricarbonyl
108 -78-1	Melamine
74 -93-1	Mercaptans (as Methyl mercaptan) - total
120 -78-5	Mercapto benzothiazole disulphide
7439 -97-6	Mercury
	Mercury (as Hg) - alkyl compounds
108 -62-3	Methaldehyde
79 -41-4	Methacrylic acid
101 -68-8	Methane diphenyl diisocyanate
67 -56-1	Methanol
72 -43-5	Methoxychlor
109 -86-4	Methoxyethanol, 2-

C A S #	CHEMICAL NAME
96 -33-3	Methyl acrylate
74 -83-9	Methyl bromide
74 -87-3	Methyl chloride
78 -93-3	Methyl ethyl ketone
1338 -23-4	Methyl ethyl ketone peroxide
60 -34-4	Methyl hydrazine
74 -88-4	Methyl iodide
108 -10-1	Methyl isobutyl ketone
624 -83-9	Methyl isocyanate
2987 -53-3	Methyl mercapto aniline
80 -62-6	Methyl methacrylate
119 -36-8	Methyl salicylate
98 -83-9	Methyl styrene, alpha-
1634 -04-4	Methyl tert-butyl ether
109 -87-5	Methylal
3697 24 3	Methylchrysene, 5-
12108 -13-3	Methylcyclopentadienyl manganese tricarbonyl (MMT)
74 -95-3	Methylene bromide
75 -09-2	Methylene chloride
107 -77-9	Methylene dianiline
101 -14-4	Methylenebis (2-chloroaniline), 4,4'-
101 -61-1	Methylenebis(n,n-dimethyl) benzenamine, 4,4'-
101 -77-9	Methylenedianiline, 4,4'-
110 -12-3	Methyl-2-hexanone, 5-
872 -50-4	Methyl-2-pyrrolidone, n-
110 -43-0	Methyl-n-amyl ketone
90 -94-8	Michler's ketone
	Miconazole nitrate
MILK POWDER	Milk powder
	Mineral fibres (e.g.Resp. fibreglass, mineral wool)
	Mineral spirit
7439 -98-7	Molybdenum
1313 -27-5	Molybdenum trioxide
108 -90-7	Monochlorobenzene
74 -89-5	Monomethyl amine
505 -60-2	Mustard gas
91 -20-3	Naphthalene
90 -15-3	Naphthol, alpha-
134 -32-7	Naphthylamine, alpha-
91 -59-8	Naphthylamine, beta-
7440 -02-0	Nickel

CAS #	CHEMICAL NAME
13463 -39-3	Nickel carbonyl
7697 37 -2	Nitric acid
18662 -53-8	Nitrilotriacetic acid
98 -95-3	Nitrobenzene
92 -93-3	Nitrobiphenol, 4-
1836 -75-5	Nitrofen
51 75 -2	Nitrogen mustard
10102 -44-0	Nitrogen oxides (as Nitrogen dioxide)
55 -63-0	Nitroglycerin
88 -75-5	Nitrophenol, 2-
100 -02-7	Nitrophenol, 4-
79 -46-9	Nitropropane, 2-
55 -18-5	Nitrosodiethylamine, n-
62 -75-9	Nitrosodimethylamine, n-
86 -30-6	Nitrosodiphenylamine, n-
156 -10-5	Nitrosodiphenylamine, p-
924 -16-3	Nitrosodi-n-butylamine, n-
4549 -40-0	Nitrosomethylvinylamine,n-
59 -89-2	Nitrosomorpholine, n-
16543 -55-8	Nitrosonornicotine, n-
100 -75-4	Nitrosopiperidine, n-
759 -73-9	Nitroso-n-ethylurea, n-
684 -93-5	Nitroso-n-methylurea, n-
621 -64-7	Nitroso-n-propylamine, n-
10024 -97-2	Nitrous oxide
99 -59-2	Nitro-o-anisidine
39001 -02-0	Octachloro dibenzofurans, OCDFs
3268-87-9	Octachloro dibenzo-p-dioxins, OCDDs
2234 13 -1	Octachloronaphthalene
111 -65-9	Octane
25377 -83-7	Octene, 1-
112 -80-1	Oleic acid
20816 -12-0	Osmium tetroxide
144 -62-7	Oxalic acid
10028 -15-6	Ozone
7657 -10-1	Palladium - water soluble compounds
1910 -42-5	Paraquat dichloride - respirable
1910 -42-5	Paraquat dichloride - total in ambient air
56 -38-2	Parathion
	Particulate (inhalable, <10u)
1406 -05-9	Penicillin
19624 -22-7	Pentaborane
608 -93-5	Pentachlorobenzene

CAS #	CHEMICAL NAME
30402-15-4	Pentachloro dibenzofurans, P5CDFs
	1,2,3,7,8 Pentachloro dibenzofuran
	2,3,4,7,8 Pentachloro dibenzofuran
36088-22-9	Pentachloro dibenzo-p-dioxins, P5CDDs
	1,2,3,47,8 Pentachloro dibenzo-p-dioxin
87 -86-5	Pentachlorophenol
79 -21-0	Peracetic acid
127 -18-4	Perchloroethylene
108 -95-2	Phenol
106 -50-3	Phenylenediamine, p-
90 -43-7	Phenylphenol, 2-
75 -44-5	Phosgene
7803 -51-2	Phosphine
7664 -38-2	Phosphoric acid (as P2O5)
10025 -87-3	Phosphorus oxychloride
10026 -13-8	Phosphorus pentachloride
7723 -14-0	Phosphorus (yellow or white)
85 -44-9	Phthalic anhydride
88 -89-1	Picric acid
2062 -78-4	Pimozide
7440 -06-4	Platinum - water soluble compounds
	Polybutene-1-sulphone
1336 36 -3	Polychlorinated biphenyls (PCBs)
25267 -15-6	Polychloroprene
50 -32-8	Polycyclic aromatic hydrocarbons
151 -50-8	Potassium cyanide
1310 -58-3	Potassium hydroxide
7757 -79-	Potassium nitrate
1120 -71-4	Propane sultone
71 -23-8	Propanol, n-
57 -57-8	Propiolacetone, beta-
123 -38-6	Propionaldehyde
79 -09-4	Propionic acid
123 -62-6	Propionic anhydride (as Propionic acid)
114 -26-1	Propoxur
115 -07-1	Propylene
78 -87-5	Propylene dichloride
57 -55-6	Propylene glycol
107 -98-2	Propylene glycol methyl ether
108 -65-6	Propylene glycol monomethyl ether acetate
75 -56-9	Propylene oxide

C A S #	CHEMICAL NAME
75 -55-8	Propyleneimine
110 -86-1	Pyridene
91 -22-5	Quinoline
106 -51-4	Quinone
82 -68-8	Quintozene
	Radionuclides (Radon)
81 -07-2	Saccharin
94 -59-7	Safrole
7782 -49-2	Selenium
7803 -62-5	Silane
SILICA	Silica - respirable, under 10 um aerodynamic diameter
7440 -22-4	Silver
7631 -90-5	Sodium bisulphite
7775 -09-9	Sodium chlorate
7758 -19-2	Sodium chlorite
143 -33-9	Sodium cyanide
1310 -73-2	Sodium hydroxide
7757 -82-6	Sodium sulphate (solution)
	Stannous chloride (as Sn)
7440 -24-6	Strontium
1633 -05-2	Strontium carbonate
18480 -07-4	Strontium hydroxide
1314 -11-0	Strontium oxide
100 -42-5	Styrene
96 -09-3	Styrene oxide
	Sulphamic acid
	Sulphur compounds, reduced
7446 -09-5	Sulphur dioxide
2551 -62-4	Sulphur hexafluoride
7664 -93-9	Sulphuric acid
TSP	Suspended particulate matter - under 44 um aero. diam.
14807 -96-6	Talc - fibrous
13494 -80-9	Tellurium - excluding hydrogen telluride
100 -21-0	Terephthalic acid
	Tetrabutylurea
	Tetrachlorobenzenes
	Tetrachloro dibenzifurans, T4CDFs
	2,3,7,8 Tetrachloro dibenzofuran
41903-57-5	Tetrachloro dibenzo-p-dioxins, T4CDDs
	2,3,7,8 Tetrachloro dibenzo-p-dioxin
79 -34-5	Tetrachloroethane, 1,1,2,2-
58 -90 2	Tetrachlorophenol, 2,3,4,6-

CAS #	CHEMICAL NAME
961 -11-5	Tetrachlorvinphos
109 -99-9	Tetrahydrofuran
	Tetramethyl thiuram disulphide
7440 -28-0	Thallium
62 -55-5	Thioacetamide
139 -65-1	Thiodianiline, 4,4'-
62 -56-6	Thiourea
1314 -20-1	Thorium dioxide
7440 -31-5	Tin
7440 -32-6	Titanium
7550 -45-0	Titanium tetrachloride
	Tolmetin sodium
108 -88-3	Toluene
584 -84-9	Toluene-2,4-diisocyanate
91 -08-7	Toluene-2,6-diisocyanate
95 -53-4	Toluidine, o-
636 -21-5	Toluidine hydrochloride, o-
TRS	Total reduced sulphur (as Hydrogen sulphide)
8001 -35-2	Toxaphene
68 -76-8	Triaziquone
52 -68-6	Trichlorfon
120 -82-1	Trichlorobenzene, 1,2,4-
71 -55-6	Trichloroethane, 1,1,1-
79 -00-5	Trichloroethane, 1,1,2-
79 -01-6	Trichloroethylene
75 -69-4	Trichlorofluoromethane
95 -95-4	Trichlorophenol, 2,4,5-
88 -06-2	Trichlorophenol, 2,4,6-
76 -13-1	Trifluorotrichloroethane
1582 -09-8	Trifluralin
75 -50-3	Trimethyl amine
95 -63-6	Trimethylbenzene, 1,2,4-
77 -99-6	Trimethylol propane
	Tripropyltin methacrylate
126 -72-7	Tris (2,3-dibromopropyl) phosphate
51 -79-6	Urethane
7440 -62-2	Vanadium
108 -05-4	Vinyl acetate
593 -60-2	Vinyl bromide
75 -01-4	Vinyl chloride
75 -35-4	Vinylidene chloride (1,1-Dichloroethene)

C A S #	CHEMICAL NAME
81 -81-2	Warfarin
WHEY POWDER	Whey powder
108 -38-3	Xylene, m-
95 -47-6	Xylene, o-
106 -42-3	Xylene, p-
1330 -20-7	Xylenes
87 -62-7	Xylidine,2,6-
7440 -66-6	Zinc
7646 -85-7	Zinc chloride
12122 -67-7	Zineb

APPENDIX 2-3b

LIST OF CHEMICAL SUBSTANCES WITH SYNONYMS
(by CAS Number order)

APPENDIX 2-3b

LIST OF CHEMICAL SUBSTANCES WITH SYNONYMS (by CAS Number order)

C A S #	CHEMICAL NAME	SYNONYMS
	Alkyltoluene Sulphonamide, n-	
	Amyl acetate, n-	
	Amyl Acetate, secondary	
	Borax	
	Boric acid	
	Chlorophenol	
	Chlorophenoxy herbidices	
	Dimethylacetamide, n,n-	
	Fluorinert 3M-FC-70	
	Isoamyl acetate	
	Lead in dustfall	
	Lithium - other than hydrides	
	Mangsnese tricarbonyl	
	Mercury (as Hg) - alkyl compounds	
	Miconazole nitrate	
	Mineral spirit	
	Mineral fibres (e.g.Resp. fibreglass, mineral wool)	
	Particulate (inhalable, <10u)	
	Polybutene-1-sulphone	
	Radionuclides (Radon)	
	Silica - respirable, under 10 um aerodynamic diameter	
	Stannous chloride (as Sn)	
	Sulphamic acid	
	Sulphur compounds, reduced	
	Tetrabutylurea	
	Tetrachlorobenzenes	
	Tetramethyl thiuram disulphide	
	Tolmetin sodium	
	Tripropyltin methacrylate	
22-66-7	Diphenylhydrazine, 1,2-	Hydrazobenzene

CAS #	CHEMICAL NAME	SYNONYMS
50-00-0	Formaldehyde	BFV
50-00-0	Formaldehyde	Fannoform
50-00-0	Formaldehyde	Formaldehyde solution
50-00-0	Formaldehyde	Formaldehyde, gas
50-00-0	Formaldehyde	Formalin
50-00-0	Formaldehyde	Formalith
50-00-0	Formaldehyde	Formic aldehyde
50-00-0	Formaldehyde	Formol
50-00-0	Formaldehyde	Fyde
50-00-0	Formaldehyde	Lysoform
50-00-0	Formaldehyde	Methaldehyde
50-00-0	Formaldehyde	Methanal
50-00-0	Formaldehyde	Methyl aldehyde
50-00-0	Formaldehyde	Methylene oxide
50-00-0	Formaldehyde	Morbicid
50-00-0	Formaldehyde	Oxomethane
50-00-0	Formaldehyde	Oxymethylene
50-00-0	Formaldehyde	Paraform
50-00-0	Formaldehyde	Superlysoform
50-29-3	DDT	
50-32-8	Polycyclic aromatic hydrocarbons	Benzo(a)pyrene
51-28-5	Dinitrophenol, 2,4-	
51-75-2	Nitrogen mustard	2-Chloro-n-(2-chloroethyl)-n-methylethanamine
51-79-6	Urethane	Ethyl carbamate
52-68-6	Trichlorfon	Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester
52-86-8	Haloperidol	
53-70-3	Dibenz[a,h]anthracene	
53-96-3	Acetylaminofluorene, 2-	
55-18-5	Nitrosodiethylamine, n-	DEN
55-18-5	Nitrosodiethylamine, n-	DEN (mutagen)
55-18-5	Nitrosodiethylamine, n-	DENA
55-18-5	Nitrosodiethylamine, n-	Diethylamine, n-nitroso- (6CI, 8CI)
55-18-5	Nitrosodiethylamine, n-	Diethylnitrosamide
55-18-5	Nitrosodiethylamine, n-	Diethylnitrosamine
55-18-5	Nitrosodiethylamine, n-	Diethylnitrosoamine
55-18-5	Nitrosodiethylamine, n-	Ethanamine, n-ethyl-n-nitroso- (9CI)
55-18-5	Nitrosodiethylamine, n-	n-Ethyl-n-nitrosoethanamine
55-18-5	Nitrosodiethylamine, n-	Nitrosodiethylamine

C A S #	CHEMICAL NAME	SYNONYMS
55-18-5	Nitrosodiethylamine, n-	n-Nitroso-n,n-diethylamine
55-18-5	Nitrosodiethylamine, n-	n,n-Diethylnitrosoamine
55-21-0	Benzamide	
55-63-0	Nitroglycerin	1,2,3-Propanetriol, trinitrate (9CI)
55-63-0	Nitroglycerin	1,2,3-Propanetriyl nitrate
55-63-0	Nitroglycerin	Anglbid
55-63-0	Nitroglycerin	Anglnine
55-63-0	Nitroglycerin	Anglolingual
55-63-0	Nitroglycerin	Angorin
55-63-0	Nitroglycerin	Blasting oil
55-63-0	Nitroglycerin	Cardamist
55-63-0	Nitroglycerin	Gilucor nitro
55-63-0	Nitroglycerin	Glonoin
55-63-0	Nitroglycerin	Glycerin trinitrate
55-63-0	Nitroglycerin	Glycerol trinitrate
55-63-0	Nitroglycerin	Glyceryl nitrate
55-63-0	Nitroglycerin	Glyceryl trinitrate
55-63-0	Nitroglycerin	GTN
55-63-0	Nitroglycerin	Klavikordal
55-63-0	Nitroglycerin	Lenitral
55-63-0	Nitroglycerin	Myoglycerin
55-63-0	Nitroglycerin	NG
55-63-0	Nitroglycerin	Niglin
55-63-0	Nitroglycerin	Niglycon
55-63-0	Nitroglycerin	Nitora
55-63-0	Nitroglycerin	Nitrin
55-63-0	Nitroglycerin	Nitrine
55-63-0	Nitroglycerin	Nitrine-TDC
55-63-0	Nitroglycerin	Nitro-Dur
55-63-0	Nitroglycerin	Nitroglycerol
55-63-0	Nitroglycerin	Nitroglyn
55-63-0	Nitroglycerin	Nitrol
55-63-0	Nitroglycerin	Nitrol (pharmaceutical)
55-63-0	Nitroglycerin	Nitrolan
55-63-0	Nitroglycerin	Nitro-lent
55-63-0	Nitroglycerin	Nitroletten
55-63-0	Nitroglycerin	Nitrolingual
55-63-0	Nitroglycerin	Nitrolowe
55-63-0	Nitroglycerin	Nitromel

CAS #	CHEMICAL NAME	SYNONYMS
55-63-0	Nitroglycerin	Nitrong
55-63-0	Nitroglycerin	Nitrorectal
55-63-0	Nitroglycerin	Nitroretard
55-63-0	Nitroglycerin	Nitro-Span
55-63-0	Nitroglycerin	Nitrostabilin
55-63-0	Nitroglycerin	Nitrostat
55-63-0	Nitroglycerin	Nitrozell retard
55-63-0	Nitroglycerin	NK 843
55-63-0	Nitroglycerin	NTG
55-63-0	Nitroglycerin	Nysconitrine
55-63-0	Nitroglycerin	Perglottal
55-63-0	Nitroglycerin	Propanetriol trinitrate
55-63-0	Nitroglycerin	Soup
55-63-0	Nitroglycerin	S.N.G.
55-63-0	Nitroglycerin	Temponitrin
55-63-0	Nitroglycerin	Trinalgon
55-63-0	Nitroglycerin	Trinitrin
55-63-0	Nitroglycerin	Trinitroglycerine
55-63-0	Nitroglycerin	Trinitroglycerol
55-63-0	Nitroglycerin	Trinitrol
55-63-0	Nitroglycerin	Vasoglyn
56-23-5	Carbon tetrachloride	Benzinoform
56-23-5	Carbon tetrachloride	Carbon chloride (CCL14)
56-23-5	Carbon tetrachloride	Carbona
56-23-5	Carbon tetrachloride	FLukoids
56-23-5	Carbon tetrachloride	Methane, tetrachloro- (9CI)
56-23-5	Carbon tetrachloride	Necatorina
56-23-5	Carbon tetrachloride	Perchloromethane**
56-23-5	Carbon tetrachloride	R 10
56-23-5	Carbon tetrachloride	R 10 (refrigerant)
56-23-5	Carbon tetrachloride	Tetrachloromethane
56-23-5	Carbon tetrachloride	Tetrafinol
56-23-5	Carbon tetrachloride	Tetraform
56-23-5	Carbon tetrachloride	Tetrasol
56-23-5	Carbon tetrachloride	Univerm
56-23-5	Carbon tetrachloride	Vermoestricid
56-38-2	Parathion	Phosphorothioic acid, o, o-diethyl-o-(4-nitrophenyl)ester
56-55-3	Benz[a]anthracene	
57-14-7	Dimethyl hydrazine, 1,1-	

CAS #	CHEMICAL NAME	SYNONYMS
57-55-6	Propylene glycol	
57-57-8	Propiolacetone, beta-	
57-74-9	Chlordane	1068
57-74-9	Chlordane	1,2,4,5,6,7,8-8-octachloro-2,3,3a,4,7,7a-hexahydro-(C1)
57-74-9	Chlordane	CD 68
57-74-9	Chlordane	Chlorindan
57-74-9	Chlordane	Cortilan-neu
57-74-9	Chlordane	Dowchlor
57-74-9	Chlordane	ENT 9932
57-74-9	Chlordane	HCS 3260
57-74-9	Chlordane	M 140
57-74-9	Chlordane	Octachloro-4,7-methanotetrahydroindane
57-74-9	Chlordane	Oktaterr
57-74-9	Chlordane	Tat Chlor 4
57-74-9	Chlordane	Toxichlor
57-74-9	Chlordane	4,7-Methenoindan,1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-(6CI,8CI)
58-89-9	Lindane	666
58-89-9	Lindane	Aalindan
58-89-9	Lindane	Aficide
58-89-9	Lindane	Agrocide
58-89-9	Lindane	Agrocide III
58-89-9	Lindane	Agrocide WP
58-89-9	Lindane	Ameisenmittel merck
58-89-9	Lindane	Ameisentod
58-89-9	Lindane	Aparasin
58-89-9	Lindane	Aphtiria
58-89-9	Lindane	Aplidal
58-89-9	Lindane	Arbitox
58-89-9	Lindane	BBH
58-89-9	Lindane	Ben-hex
58-89-9	Lindane	Benhexol
58-89-9	Lindane	Bentox 10
58-89-9	Lindane	Celanex
58-89-9	Lindane	Chloresene
58-89-9	Lindane	Codechine
58-89-9	Lindane	Cyclohexane, 1,2,3,4,5,6-hexachloro-(1.alpha.,2.alpha.,3.beta.,4.alpha.,5.
58-89-9	Lindane	Cyclohexane, 1,2,3,4,5,6-hexachloro-.gamma.-(8CI)
58-89-9	Lindane	DBH
58-89-9	Lindane	Demtol-Extrakt

CAS #	CHEMICAL NAME	SYNONYMS
58-89-9	Lindane	Devoran
58-89-9	Lindane	Dol granule
58-89-9	Lindane	Drillitox-Spezial Aglukon
58-89-9	Lindane	ENT 7,796
58-89-9	Lindane	Entomoxan
58-89-9	Lindane	Fenoform forte
58-89-9	Lindane	Forst-Nexen
58-89-9	Lindane	Gamacid
58-89-9	Lindane	Gamma benzene hexachloride
58-89-9	Lindane	Gamma-HCH
58-89-9	Lindane	Gammalin
58-89-9	Lindane	Gammalin 20
58-89-9	Lindane	Gammaterr
58-89-9	Lindane	Gammexane
58-89-9	Lindane	Geobilan
58-89-9	Lindane	Geolin G 3
58-89-9	Lindane	Gexane
58-89-9	Lindane	HCC
58-89-9	Lindane	HCCH
58-89-9	Lindane	HCH
58-89-9	Lindane	Heclotox
58-89-9	Lindane	Hexa
58-89-9	Lindane	Hexachloran
58-89-9	Lindane	Hexachlorane
58-89-9	Lindane	Hexachlorocyclohexane
58-89-9	Lindane	Hexacide
58-89-9	Lindane	Hexaverm
58-89-9	Lindane	Hexyclan
58-89-9	Lindane	Hilbeech
58-89-9	Lindane	Hortex
58-89-9	Lindane	Hungaria L7
58-89-9	Lindane	Jacutin
58-89-9	Lindane	Kokotine
58-89-9	Lindane	Kwell
58-89-9	Lindane	Lasochron
58-89-9	Lindane	Lendine
58-89-9	Lindane	Lentox
58-89-9	Lindane	Lindatox
58-89-9	Lindane	Lindenai
58-89-9	Lindane	Lindex
58-89-9	Lindane	Lindosep

C A S #	CHEMICAL NAME	SYNONYMS
58-89-9	Lindane	Lintox
58-89-9	Lindane	Linvur
58-89-9	Lindane	Lorexane
58-89-9	Lindane	Mglawik L
58-89-9	Lindane	Milbol 49
58-89-9	Lindane	Mszycol
58-89-9	Lindane	Neo-Scabicidol
58-89-9	Lindane	Nexen FB
58-89-9	Lindane	Nexit
58-89-9	Lindane	Nexit-Stark
58-89-9	Lindane	Nexol-E
58-89-9	Lindane	Nicochloran
58-89-9	Lindane	Omnitox
58-89-9	Lindane	Ovadzlak
58-89-9	Lindane	Owadzlak
58-89-9	Lindane	Pedraczak
58-89-9	Lindane	Pflanzol
58-89-9	Lindane	PLK
58-89-9	Lindane	Quellada
58-89-9	Lindane	Sang-gammaa
58-89-9	Lindane	Spritzlindane
58-89-9	Lindane	Spritz-Rapidin
58-89-9	Lindane	Spruehpflanzol
58-89-9	Lindane	Streunex
58-89-9	Lindane	TAP 5
58-89-9	Lindane	Tri-6
58-89-9	Lindane	Verindal Ultra
58-89-9	Lindane	.gamma.-1,2,3,4,5,6-Hexachlorocyclohexane
58-89-9	Lindane	.gamma.-666
58-89-9	Lindane	.gamma.-BHC
58-89-9	Lindane	.gamma.-HCH
58-89-9	Lindane	.gamma.-Hexachloran
58-89-9	Lindane	.gamma.-Hexachlorane
58-89-9	Lindane	.gamma.-Hexachlorobenzene
58-89-9	Lindane	.gamma.-Hexachlorocyclohexane
58-89-9	Lindane	.gamma.-Lindane
58-90-2	Tetrachlorophenol, 2,3,4,6-	
59-89-2	Nitrosomorpholine, n-	
60-00-4	Ethylenediaminetetraacetic acid	
60-09-3	Aminoazobenzene, 4-	

CAS #	CHEMICAL NAME	SYNONYMS
60-11-7	Dimethylaminoazobenzene, 4-	
60-29-7	Ethyl ether	
60-34-4	Methyl hydrazine	
60-35-5	Acetamide	
62-53-3	Aniline	Benzenamine
62-55-5	Thioacetamide	
62-56-6	Thiourea	Isothiourea
62-56-6	Thiourea	Pseudothiourea
62-56-6	Thiourea	Pseudourea, 2-thio- (6CI, 7CI)
62-56-6	Thiourea	Thiocarbamide
62-56-6	Thiourea	THU
62-56-6	Thiourea	TsIZP 34
62-56-6	Thiourea	Urea, thio- (8CI)
62-56-6	Thiourea	.beta.-Thiopseudourea
62-73-7	Dichlorvos	Phosphoric acid, 2,2-dichloroethenyl dimethyl ester
62-75-9	Nitrosodimethylamine, n-	
63-25-2	Carbaryl	1-Naphthalenol, methylcarbamate
64-17-5	Ethanol	Ethyl alcohol
64-18-6	Formic acid	
64-19-7	Acetic Acid	
64-67-5	Diethyl sulphate	
67-56-1	Methanol	Carbinol
67-56-1	Methanol	Methyl alcohol
67-56-1	Methanol	Methyl hydroxide
67-56-1	Methanol	Methylol
67-56-1	Methanol	Monohydroxymethane
67-56-1	Methanol	Wood alcohol
67-63-0	Isopropyl alcohol	2-Hydroxypropane
67-63-0	Isopropyl alcohol	2-Propanol (9CI)
67-63-0	Isopropyl alcohol	2-Propyl alcohol
67-63-0	Isopropyl alcohol	Alcojel
67-63-0	Isopropyl alcohol	Alcosolve 2
67-63-0	Isopropyl alcohol	Avantin
67-63-0	Isopropyl alcohol	Avantine
67-63-0	Isopropyl alcohol	Combi-Schutz

CAS #	CHEMICAL NAME	SYNONYMS
67-63-0	Isopropyl alcohol	Dimethylcarbinol
67-63-0	Isopropyl alcohol	Hartosol
67-63-0	Isopropyl alcohol	Imsol A
67-63-0	Isopropyl alcohol	Isohol
67-63-0	Isopropyl alcohol	Isopropanol
67-63-0	Isopropyl alcohol	Lutosol
67-63-0	Isopropyl alcohol	n-Propan-2-ol
67-63-0	Isopropyl alcohol	Petrohol
67-63-0	Isopropyl alcohol	PRO
67-63-0	Isopropyl alcohol	Propol
67-63-0	Isopropyl alcohol	sec-Propyl alcohol
67-63-0	Isopropyl alcohol	Sterisol Hand Disinfectant
67-63-0	Isopropyl alcohol	Takineocol
67-64-1	Acetone	2-Propanone (9CI)
67-64-1	Acetone	Dimethyl ketone
67-64-1	Acetone	Dimethylformaldehyde
67-64-1	Acetone	Methyl ketone (6CI)
67-64-1	Acetone	Propanone
67-64-1	Acetone	Pyroacetic ether
67-64-1	Acetone	.beta.-ketopropane
67-66-3	Chloroform	Methane, trichloro- (9CI)
67-66-3	Chloroform	R 20
67-66-3	Chloroform	R 20 (refrigerant)
67-66-3	Chloroform	Trichloroform
67-66-3	Chloroform	Trichloromethane
67-72-1	Hexachloroethane	
68-76-8	Triaziquone	2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris(1-aziridinyl)-
71-23-8	Propanol, n-	Propyl alcohol
71-36-3	Butanol, n-	1-Butanol (9CI)
71-36-3	Butanol, n-	1-Butyl alcohol
71-36-3	Butanol, n-	Butanol
71-36-3	Butanol, n-	Butyl alcohol (8CI)
71-36-3	Butanol, n-	Butyl hydroxide
71-36-3	Butanol, n-	CCS 203
71-36-3	Butanol, n-	Hemostyp
71-36-3	Butanol, n-	Methylolpropane
71-36-3	Butanol, n-	N-Butan-1-ol

CAS #	CHEMICAL NAME	SYNONYMS
71-36-3	Butanol, n-	N-Butyl alcohol
71-36-3	Butanol, n-	Propyl carbinol
71-43-2	Benzene	Benzol
71-43-2	Benzene	Benzole
71-43-2	Benzene	Coal naphtha
71-43-2	Benzene	Cyclohexatriene
71-43-2	Benzene	Phene
71-43-2	Benzene	Phenyl hydride
71-43-2	Benzene	Pyrobenzol
71-43-2	Benzene	[6]Annulene
71-55-6	Trichloroethane, 1,1,1-	1,1,1-Trichlorethane
71-55-6	Trichloroethane, 1,1,1-	Aerothene TT
71-55-6	Trichloroethane, 1,1,1-	CF 2
71-55-6	Trichloroethane, 1,1,1-	Chloroten (6CI)
71-55-6	Trichloroethane, 1,1,1-	Chlorotene
71-55-6	Trichloroethane, 1,1,1-	Chlorothene
71-55-6	Trichloroethane, 1,1,1-	Chlorothene NU
71-55-6	Trichloroethane, 1,1,1-	Chlorothene SM
71-55-6	Trichloroethane, 1,1,1-	Chlorothene VG
71-55-6	Trichloroethane, 1,1,1-	Ethana NU
71-55-6	Trichloroethane, 1,1,1-	Ethane, 1,1,1-trichloro- (8CI, 9CI)
71-55-6	Trichloroethane, 1,1,1-	ICI-CF 2
71-55-6	Trichloroethane, 1,1,1-	Inhibisol
71-55-6	Trichloroethane, 1,1,1-	Methylchloroform
71-55-6	Trichloroethane, 1,1,1-	Methyltrichloromethane
71-55-6	Trichloroethane, 1,1,1-	Tafclean
71-55-6	Trichloroethane, 1,1,1-	Trichloroethane
71-55-6	Trichloroethane, 1,1,1-	Trichloromethylmethane
71-55-6	Trichloroethane, 1,1,1-	.alpha.-T
71-55-6	Trichloroethane, 1,1,1-	.alpha.-Trichloroethane
72-43-5	Methoxychlor	1,1-Bis(p-methoxyphenyl)-2,2,2-trichloroethane
72-43-5	Methoxychlor	1,1,1-Trichloro-2,2-bis(4-methoxyphenyl) ethane
72-43-5	Methoxychlor	1,1,1-Trichloro-2,2-bis(p-methoxyphenyl) ethane
72-43-5	Methoxychlor	1,1,1-Trichloro-2,2-di(4-methoxyphenyl)ethane
72-43-5	Methoxychlor	2,2-Bis(p-methoxyphenyl)-1,1,1-trichloroethane
72-43-5	Methoxychlor	2,2,2-Trichloro-1,1-bis(4-methoxyphenyl) ethane
72-43-5	Methoxychlor	4,4'-(2,2,2-Trichloroethylidene)dianisole
72-43-5	Methoxychlor	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-(9CI)

CAS #	CHEMICAL NAME	SYNONYMS
72-43-5	Methoxychlor	Dimethoxy-DDT
72-43-5	Methoxychlor	Dimethoxy-DT
72-43-5	Methoxychlor	Di(p-methoxyphenyl)trichloromethyl methane
72-43-5	Methoxychlor	DMDT
72-43-5	Methoxychlor	Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)- (8CI)
72-43-5	Methoxychlor	Marlate
72-43-5	Methoxychlor	Methoxy-DDT
72-43-5	Methoxychlor	Metox
72-43-5	Methoxychlor	Mezox K
72-43-5	Methoxychlor	p,p-Dimethoxydiphenyltrichloroethane
72-43-5	Methoxychlor	p,p-DMDT
72-43-5	Methoxychlor	p,p-Methoxychlor
74-83-9	Methyl bromide	Bromomethane**
74-83-9	Methyl bromide	Curafume
74-83-9	Methyl bromide	Embafume
74-83-9	Methyl bromide	Halon 1001
74-83-9	Methyl bromide	Haltox
74-83-9	Methyl bromide	Iscobrome
74-83-9	Methyl bromide	Methane, bromo- (8CI, 9CI)
74-83-9	Methyl bromide	Monobromomethane
74-83-9	Methyl bromide	R 40B1
74-83-9	Methyl bromide	Terabol
74-85-1	Ethylene	Acetene
74-85-1	Ethylene	Bicarburretted hydrogen
74-85-1	Ethylene	Elayl
74-85-1	Ethylene	Ethene (9CI)
74-85-1	Ethylene	Oleflant gas
74-86-2	Acetylene	
74-87-3	Methyl chloride	Artic
74-87-3	Methyl chloride	Chloromethane**
74-87-3	Methyl chloride	Methane, chloro (8CI, 9CI)
74-87-3	Methyl chloride	Monochloromethane
74-87-3	Methyl chloride	R 40
74-88-4	Methyl iodide	
74-89-5	Monomethyl amine	

CAS #	CHEMICAL NAME	SYNONYMS
74-90-8	Hydrogen cyanide	Carbon hydride nitride (CHN)
74-90-8	Hydrogen cyanide	Evercyn
74-90-8	Hydrogen cyanide	Formic anammonide
74-90-8	Hydrogen cyanide	Formonitrile
74-90-8	Hydrogen cyanide	Hydrocyanic acid (8CI, 9CI)
74-90-8	Hydrogen cyanide	Prussic acid
74-93-1	Mercaptans (as Methyl mercaptan) - total	
74-95-3	Methylene bromide	
75-00-3	Chloroethane	Ethyl chloride
75-01-4	Vinyl chloride	Chloroethene
75-01-4	Vinyl chloride	Chloroethylene
75-01-4	Vinyl chloride	Ethene, chloro- (9CI)
75-01-4	Vinyl chloride	Ethylene, chloro- (8CI)
75-01-4	Vinyl chloride	Monochloroethylene
75-01-4	Vinyl chloride	Vinyl C monomer
75-05-8	Acetonitrile	
75-07-0	Acetaldehyde	Acetic aldehyde
75-07-0	Acetaldehyde	Ethanal
75-07-0	Acetaldehyde	Ethyl aldehyde
75-09-2	Methylene chloride	Aerothene MM
75-09-2	Methylene chloride	Dichloromethane**
75-09-2	Methylene chloride	Methane, dichloro- (8CI, 9CI)
75-09-2	Methylene chloride	Methylene dichloride
75-09-2	Methylene chloride	Narkotil
75-09-2	Methylene chloride	R 30
75-09-2	Methylene chloride	Solaesthin
75-09-2	Methylene chloride	Solmethine
75-15-0	Carbon disulphide	Carbon bisulfide
75-15-0	Carbon disulphide	Carbon bisulphide
75-15-0	Carbon disulphide	Carbon disulfide
75-15-0	Carbon disulphide	Carbon sulfide (CS2)
75-15-0	Carbon disulphide	Dithiocarbonic anhydride
75-18-3	Dimethyl sulphide	
75-20-7	Calcium carbide	

C A S #	CHEMICAL NAME	SYNONYMS
75-21-8	Ethylene oxide	1,2-Epoxyethane
75-21-8	Ethylene oxide	Dihydrooxirene
75-21-8	Ethylene oxide	Dimethylene oxide
75-21-8	Ethylene oxide	Epoxyethane
75-21-8	Ethylene oxide	Ethene oxide
75-21-8	Ethylene oxide	ETO
75-21-8	Ethylene oxide	Oxacyclopropane
75-21-8	Ethylene oxide	Oxane
75-21-8	Ethylene oxide	Oxydoethane
75-21-8	Ethylene oxide	Oxyfume
75-21-8	Ethylene oxide	Oxyfume 12
75-21-8	Ethylene oxide	Oxyrane (9CI)
75-21-8	Ethylene oxide	Oxyrane, dihydro-
75-21-8	Ethylene oxide	T-Gas
75-25-2	Bromoform	Tribromomethane
75-27-4	Dichlorobromomethane	
75-35-4	Vinylidene chloride (1,1-Dichloroethene)	1,1-Dichloroethene
75-35-4	Vinylidene chloride (1,1-Dichloroethene)	1,1-Dichloroethylene
75-35-4	Vinylidene chloride (1,1-Dichloroethene)	Ethene, 1,1-dichloro- (9CI)
75-35-4	Vinylidene chloride (1,1-Dichloroethene)	Ethylene, 1,1-dichloro- (8CI)
75-44-5	Phosgene	Carbon dichloride oxide
75-44-5	Phosgene	Carbon oxychloride
75-44-5	Phosgene	Carbonic dichloride (9CI)
75-44-5	Phosgene	Carbonyl chloride
75-44-5	Phosgene	Carbonyl dichloride
75-44-5	Phosgene	CG
75-44-5	Phosgene	Chloroformyl chloride
75-44-5	Phosgene	Phosgen
75-45-6	Chlorodifluoromethane	Freon 22
75-50-3	Trimethyl amine	
75-55-8	Propylaneimine	
75-56-9	Propylene oxide	1,2-Epoxypropane
75-56-9	Propylene oxide	AD 6
75-56-9	Propylene oxide	AD 6 (auapending agent)
75-56-9	Propylene oxide	Epoxypropane

CAS #	CHEMICAL NAME	SYNONYMS
75-56-9	Propylene oxide	Methyloxirane
75-56-9	Propylene oxide	Oxirane, methyl- (9CI)
75-56-9	Propylene oxide	Propane, 1,1-epoxy- (9CI)
75-56-9	Propylene oxide	Propene oxide
75-56-9	Propylene oxide	Propylene epoxide
75-65-0	Butyl alcohol, tertiary-	1,1-Dimethylethanol
75-65-0	Butyl alcohol, tertiary-	2-Methyl-2-propanol
75-65-0	Butyl alcohol, tertiary-	2-Propanol, 2-methyl- (9CI)
75-65-0	Butyl alcohol, tertiary-	T-Butanol
75-65-0	Butyl alcohol, tertiary-	Tertiary butanol
75-65-0	Butyl alcohol, tertiary-	Trimethylcarbinol
75-65-0	Butyl alcohol, tertiary-	Trimethylmethanol
75-69-4	Trichlorofluoromethane	
75-71-8	Difluorodichloromethane	Feon (12)
76-13-1	Trifluorotrichloroethane	1,1,2-Trichloro-1,2,2-trifluoroethane
76-13-1	Trifluorotrichloroethane	1,1,2-Trichlorotrifluoroethane
76-13-1	Trifluorotrichloroethane	1,1,2-Trifluoro-1,2,2-trichloroethane
76-13-1	Trifluorotrichloroethane	1,1,2-Trifluorotrichloroethane
76-13-1	Trifluorotrichloroethane	1,2,2-Trichlorotrifluoroethane
76-13-1	Trifluorotrichloroethane	Arcton 63
76-13-1	Trifluorotrichloroethane	Arklone P
76-13-1	Trifluorotrichloroethane	Asahifron 113
76-13-1	Trifluorotrichloroethane	Daiflon S 3
76-13-1	Trifluorotrichloroethane	Ethane, 1,1,2-trichloro-1,2,2-trifluoro- (8CI, 9CI)
76-13-1	Trifluorotrichloroethane	F 113
76-13-1	Trifluorotrichloroethane	FC 113
76-13-1	Trifluorotrichloroethane	Fluorocarbon 113
76-13-1	Trifluorotrichloroethane	Forane 113
76-13-1	Trifluorotrichloroethane	Freon 113**
76-13-1	Trifluorotrichloroethane	Freon 113TR-T
76-13-1	Trifluorotrichloroethane	Freon TF
76-13-1	Trifluorotrichloroethane	Frigen 113
76-13-1	Trifluorotrichloroethane	Frigen 113A
76-13-1	Trifluorotrichloroethane	Frigen 113TR
76-13-1	Trifluorotrichloroethane	Frigen TR-N
76-13-1	Trifluorotrichloroethane	Frigen TR-T
76-13-1	Trifluorotrichloroethane	Genetron 113
76-13-1	Trifluorotrichloroethane	Iaceon 113

CAS #	CHEMICAL NAME	SYNONYMS
76-13-1	Trifluorotrichloroethane	Khladon 113
76-13-1	Trifluorotrichloroethane	Ledon 113
76-13-1	Trifluorotrichloroethane	R 113
76-13-1	Trifluorotrichloroethane	R 113 (halocaarbon)
76-13-1	Trifluorotrichloroethane	Refrigerant 113
76-13-1	Trifluorotrichloroethane	Refrigerant R 113
76-44-8	Heptachlor	1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene
77-47-4	Hexachlorocyclopentadiene	1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene
77-47-4	Hexachlorocyclopentadiene	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-(8CI, 9CI)
77-47-4	Hexachlorocyclopentadiene	C 56
77-47-4	Hexachlorocyclopentadiene	Graphlox
77-47-4	Hexachlorocyclopentadiene	Hexachloro-1,3-cyclopentadiene
77-47-4	Hexachlorocyclopentadiene	HRS 1655
77-47-4	Hexachlorocyclopentadiene	Perchlorocyclopentadiene
77-58-7	Dibutyltin dilaurate	
77-78-1	Dimethyl sulphate	
77-92-9	Citric acid	
77-99-6	Trimethylol propane	
78-83-1	Isobutanol	
78-84-2	Isobutyraldehyde	
78-87-5	Propylene dichloride	1,2-Dichloropropane
78-87-5	Propylene dichloride	Propane, 1,2-dichloro- (8CI, 9CI)
78-87-5	Propylene dichloride	Propylene chloride
78-87-5	Propylene dichloride	Propylene dichloride
78-92-2	Butyl alcohol, sec-	
78-93-3	Methyl ethyl ketone	2-Butanone (8CI, 9CI)
78-93-3	Methyl ethyl ketone	3-Butanone
78-93-3	Methyl ethyl ketone	Butanone
78-93-3	Methyl ethyl ketone	Ethyl methyl ketone
79-00-5	Trichloroethane, 1,1,2-	
79-01-6	Trichloroethylene	1,1,2-Trichloroethylene
79-01-6	Trichloroethylene	Algylen

CAS #	CHEMICAL NAME	SYNONYMS
79-01-6	Trichloroethylene	Anamenth
79-01-6	Trichloroethylene	Chlorilen
79-01-6	Trichloroethylene	Chlorylen
79-01-6	Trichloroethylene	Densinfluat
79-01-6	Trichloroethylene	Ethene, trichloro- (9CI)
79-01-6	Trichloroethylene	Ethinyl trichloride
79-01-6	Trichloroethylene	Ethylene trichloride
79-01-6	Trichloroethylene	Ethylene, trichloro- (8CI)
79-01-6	Trichloroethylene	Fluate
79-01-6	Trichloroethylene	Germalgene
79-01-6	Trichloroethylene	Narcogen
79-01-6	Trichloroethylene	Narkosoid
79-01-6	Trichloroethylene	Threthylen
79-01-6	Trichloroethylene	Threthylene
79-01-6	Trichloroethylene	Trethylene
79-01-6	Trichloroethylene	Tri
79-01-6	Trichloroethylene	Trichloran
79-01-6	Trichloroethylene	Trichloren
79-01-6	Trichloroethylene	Trichloroethene
79-01-6	Trichloroethylene	Trichloroethylene
79-01-6	Trichloroethylene	Triclene
79-01-6	Trichloroethylene	Trielene
79-01-6	Trichloroethylene	Trielin
79-01-6	Trichloroethylene	Trieline
79-01-6	Trichloroethylene	Trilen
79-01-6	Trichloroethylene	Trilene
79-01-6	Trichloroethylene	Trimar
79-01-6	Trichloroethylene	Westrosol
79-06-1	Acrylamide	2-Propenamide (9CI)
79-06-1	Acrylamide	Acrylic amide
79-06-1	Acrylamide	Ethylenecarboxamide
79-06-1	Acrylamide	Propenamide
79-06-1	Acrylamide	Vinyl amide
79-09-4	Proplonic acid	
79-10-7	Acrylic acid	
79-11-8	Chloroacetic acid	
79-21-0	Peracetic acid	
79-34-5	Tetrachloroethane, 1,1,2,2-	

C A S #	CHEMICAL NAME	SYNONYMS
79-41-4	Methacrylic acid	
79-44-7	Dimethylcarbamyl chloride	
79-46-9	Nitropropane, 2-	
80-05-7	Isopropylidenediphenol, 4,4'-	
80-15-9	Cumene hydroperoxide	
80-62-6	Methyl methacrylate	2-Propenoic acid, 2-methyl-, methyl ester (9CI)
80-62-6	Methyl methacrylate	Methacrylic acid methyl ester (6CI, 8CI)
80-62-6	Methyl methacrylate	Methacrylic acid methyl ester (7CI)
80-62-6	Methyl methacrylate	Methyl 2-methyl-2-propanoate
80-62-6	Methyl methacrylate	Methyl 2-methylpropenoate
80-62-6	Methyl methacrylate	MMA
80-62-6	Methyl methacrylate	Pegalan
81-07-2	Saccharin	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide
81-81-2	Warfarin	
81-88-9	C.I. Food Red 15*	
82-28-0	Amino-2-methylanthraquinone, 1-	
82-68-8	Quintozene	Pentachloronitrobenzene
84-51-5	Ethylanthraquinone, 2-	
84-66-2	Diethyl phthalate	1,2-Benzenedicarboxylic acid, diethyl ester (9CI)
84-66-2	Diethyl phthalate	Anozol
84-66-2	Diethyl phthalate	Diethyl 1,2-benzenedicarboxylate
84-66-2	Diethyl phthalate	DEP
84-66-2	Diethyl phthalate	Ethyl phthalate
84-66-2	Diethyl phthalate	Neantine
84-66-2	Diethyl phthalate	o-Benzenedicarboxylic acid diethyl ester
84-66-2	Diethyl phthalate	Palatinol A
84-66-2	Diethyl phthalate	Phthalic acid, diethyl ester (6CI, 8CI)
84-66-2	Diethyl phthalate	Phthalol
84-66-2	Diethyl phthalate	Placidol E
84-66-2	Diethyl phthalate	Solvanol
84-66-2	Diethyl phthalate	Unimoll DA
84-74-2	Dibutyl phthalate	
84-75-3	Dihexyl phthalate	DHP
85-00-7	Diquat dibromide - respirable	
85-44-9	Phthalic anhydride	1,2-Benzenedicarboxylic anhydride

CAS #	CHEMICAL NAME	SYNONYMS
85-44-9	Phthalic anhydride	1,3-Isobenzofurandione (9CI)
85-44-9	Phthalic anhydride	1,3-Phthalandione
85-44-9	Phthalic anhydride	Araldite HT 901
85-44-9	Phthalic anhydride	ESEN
85-44-9	Phthalic anhydride	HT 901
85-44-9	Phthalic anhydride	Phthalandione
85-44-9	Phthalic anhydride	Phthalanhydride
85-44-9	Phthalic anhydride	Retarder AK
85-44-9	Phthalic anhydride	Retarder ESEN
85-44-9	Phthalic anhydride	Retarder PD
85-44-9	Phthalic anhydride	Sconoc 7
85-44-9	Phthalic anhydride	TGL 6525
85-44-9	Phthalic anhydride	Vulkalent B/C
85-68-7	Butyl Benzyl phthalate	
86-30-6	Nitrosodiphenylamine, n-	
87-62-7	Xylidine, 2,6-	
87-68-3	Hexachloro-1,3-butadiene	
87-86-5	Pentachlorophenol	1-Hydroxypentachlorobenzene
87-86-5	Pentachlorophenol	Chlon
87-86-5	Pentachlorophenol	Dowicide 7
87-86-5	Pentachlorophenol	Dura treet II
87-86-5	Pentachlorophenol	EP 30
87-86-5	Pentachlorophenol	Fungifen
87-86-5	Pentachlorophenol	Grundier Arbezol
87-86-5	Pentachlorophenol	Lauxtol
87-86-5	Pentachlorophenol	Liroprem
87-86-5	Pentachlorophenol	PCP (pesticide)
87-86-5	Pentachlorophenol	Penchlorol
87-86-5	Pentachlorophenol	Permasan
87-86-5	Pentachlorophenol	Phenol, pentachloro- (8CI, 9CI)
87-86-5	Pentachlorophenol	Pol Nu
87-86-5	Pentachlorophenol	Preventol P
87-86-5	Pentachlorophenol	Santophen 20
87-86-5	Pentachlorophenol	Woodtreat A
88-06-2	Trichlorophenol, 2,4,6-	
88-75-5	Nitrophenol, 2-	
88-89-1	Picric acid	
90-04-0	Anisidine, ortho-	

CAS #	CHEMICAL NAME	SYNONYMS
90-15-3	Naphthol, alpha-	
90-43-7	Phenylphenol, 2-	
90-94-8	Michler's ketone	
91-08-7	Toluene-2,6-diisocyanate	
91-20-3	Naphthalene	Albocarbon
91-20-3	Naphthalene	Dezodorator
91-20-3	Naphthalene	Moth flakes
91-20-3	Naphthalene	Naphthalene (8CI, 9CI)
91-20-3	Naphthalene	Naphthaline
91-20-3	Naphthalene	Tar camphor
91-20-3	Naphthalene	White tar
91-22-5	Quinoline	
91-59-8	Naphthylamine, beta-	
91-94-1	Dichlorobenzidine, 3,3-	3,3'-Dichloro-4,4'-diaminobiphenyl
91-94-1	Dichlorobenzidine, 3,3-	3,3'-dichlorobiphenyl-4,4'-diamine
91-94-1	Dichlorobenzidine, 3,3-	4,4'-Diamino-3,3'-dichlorobiphenyl
91-94-1	Dichlorobenzidine, 3,3-	4,4'-Diamino-3,3'-dichlorodiphenyl
91-94-1	Dichlorobenzidine, 3,3-	Benzidine, 3,3-dichloro- (7CI, 8CI)
91-94-1	Dichlorobenzidine, 3,3-	Curithane C 126
91-94-1	Dichlorobenzidine, 3,3-	C.I 23060
91-94-1	Dichlorobenzidine, 3,3-	o,o'-Dichlorobenzidine
91-94-1	Dichlorobenzidine, 3,3-	[1,1'-biphenyl]-4,4'-diamine,3,3'-dichloro-(9CI)
92-52-4	Biphenyl	1,1'-Biphenyl (9CI)
92-52-4	Biphenyl	Bibenzene
92-52-4	Biphenyl	Phenylbenzene
92-52-4	Biphenyl	Tetrosin LY
92-67-1	Aminobiphenyl, 4-	
92-87-5	Benzidine	
92-93-3	Nitrobiphenol, 4-	
94-36-0	Benzoyl peroxide	
94-59-7	Safrole	
94-75-7	D, 2,4-	Acetic acid, (2,4-dichlorophenoxy)
95-16-9	Benzothiazole	
95-47-6	Xylene, o-	

CAS #	CHEMICAL NAME	SYNONYMS
95-48-7	Cresol, O-	
95-50-1	Dichlorobenzene, ortho-	1,2-Dichlorobenzene
95-50-1	Dichlorobenzene, ortho-	Benzene, 1,2-dichloro- (9CI)
95-50-1	Dichlorobenzene, ortho-	Benzene, o-dichloro- (9CI)
95-50-1	Dichlorobenzene, ortho-	Cloroben
95-50-1	Dichlorobenzene, ortho-	Dilatin DB
95-50-1	Dichlorobenzene, ortho-	Dowtherm E
95-50-1	Dichlorobenzene, ortho-	o-Dichlorobenzene
95-53-4	Toluidine, o-	
95-63-6	Trimethylbenzene, 1,2,4-	
95-80-7	Diaminotoluene, 2,4-s	
95-95-4	Trichlorophenol, 2,4,5-	
96-09-3	Styrene oxide	
96-12-8	Dibromo-3-chloropropane, 1,2-	DBCP
96-33-3	Methyl acrylate	2-Propanoaic acid, methyl ester
96-33-3	Methyl acrylate	2-Propanoaic acid, methyl ester (9CI)
96-33-3	Methyl acrylate	Acrylic acid methyl ester (6CI, 8CI)
96-33-3	Methyl acrylate	Methoxycarbonylethylene
96-33-3	Methyl acrylate	Methyl prop-2-enoate
96-33-3	Methyl acrylate	Methyl propanoate
96-45-7	Ethylene thiourea	
97-56-3	C.I. Solvent Yellow 3*	
97-85-8	Isobutyl Isobutyrate	
98-00-0	Furfuryl alcohol	
98-01-1	Furfural	
98-07-7	Benzoic trichloride	Benzotrichloride
98-82-8	Cumene	
98-82-8	Isopropyl benzene	2-Phenylpropane
98-82-8	Isopropyl benzene	Benzene,(1-methylethyl)- (9CI)
98-82-8	Isopropyl benzene	Cumene
98-82-8	Isopropyl benzene	Cumol
98-82-8	Isopropyl benzene	(1-Methylethyl)benzene
98-83-9	Methyl Styrene, alpha-	

CAS #	CHEMICAL NAME	SYNONYMS
98-86-2	Acetophenone	
98-87-3	Benzal chloride	
98-88-4	Benzoyl chloride	Benzaldehyde, .alpha.-chloro-
98-88-4	Benzoyl chloride	Benzenecarbonyl chloride
98-95-3	Nitrobenzene	
99-59-2	Nitro-o-anisidine	
100-02-7	Nitrophenol, 4-	
100-21-0	Terephthalic acid	
100-41-4	Ethyl benzene	Benzene, ethyl- (7CI, 8CI, 9CI)
100-41-4	Ethyl benzene	EB
100-41-4	Ethyl benzene	Ethylbenzol
100-41-4	Ethyl benzene	Phenylethane
100-41-4	Ethyl benzene	.alpha.-Methyltoluene
100-42-5	Styrene	Benzene, ethenyl- (9CI)
100-42-5	Styrene	Cinnamene
100-42-5	Styrene	Phenethylene
100-42-5	Styrene	Phenylethene
100-42-5	Styrene	Phenylethylene
100-42-5	Styrene	Styrene (8CI)
100-42-5	Styrene	Styrol
100-42-5	Styrene	Styrole
100-42-5	Styrene	Styrolene
100-42-5	Styrene	Styropol SO
100-42-5	Styrene	Vinyl benzene
100-42-5	Styrene	Vinyl benzol
100-44-7	Benzyl chloride	
100-75-4	Nitrosopiperidine, n-	
101-14-4	Methylenebis (2-chloroaniline), 4,4`-	MBOCA
101-61-1	Methylenebis(n,n-dimethyl) benzenamine, 4,4`-	
101-68-8	Methane diphenyl diisocyanate	1,1`-Methylenebis[4-isocyanatobenzene]
101-68-8	Methane diphenyl diisocyanate	4,4-Methylenebis(isocyanatobenzene)
101-68-8	Methane diphenyl diisocyanate	4,4-Methylenebis(phenyl isocyanate)
101-68-8	Methane diphenyl diisocyanate	4,4`-Diisocyanatodiphenylmethane
101-68-8	Methane diphenyl diisocyanate	4,4`-Diphenylmethane diisocyanate
101-68-8	Methane diphenyl diisocyanate	4,4`Diphenylmethane isocyanate

CAS #	CHEMICAL NAME	SYNONYMS
101-68-8	Methane diphenyl diisocyanate	4,4'-Methylenediphenyl diisocyanate
101-68-8	Methane diphenyl diisocyanate	4,4'-Methylenediphenylene isocyanate
101-68-8	Methane diphenyl diisocyanate	4,4'-Methylenedi-p-phenylene diisocyanate
101-68-8	Methane diphenyl diisocyanate	Benzene, 1,1'-methylenebis[4-isocyanato-(9CI)]
101-68-8	Methane diphenyl diisocyanate	Bis(1,4-isocyanatophenyl)methane
101-68-8	Methane diphenyl diisocyanate	Bis(4-isocyanatophenyl)methane
101-68-8	Methane diphenyl diisocyanate	Bis(p-isocyanatophenyl)methane
101-68-8	Methane diphenyl diisocyanate	Diphenylmethane 4,4-'diisocyanate
101-68-8	Methane diphenyl diisocyanate	Diphenylmethane diisocyanate
101-68-8	Methane diphenyl diisocyanate	Di(4-isocyanatophenyl)methane
101-68-8	Methane diphenyl diisocyanate	Isocyanic acid, methylenedi-p-phenylene ester (6CI, 8CI)
101-68-8	Methane diphenyl diisocyanate	MDI
101-68-8	Methane diphenyl diisocyanate	Methylene bis(phenylisocyanate) (MBI)
101-68-8	Methane diphenyl diisocyanate	Methylenebisphenylene diisocyanate
101-68-8	Methane diphenyl diisocyanate	Methylenebis-p-phenylene diisocyanate
101-68-8	Methane diphenyl diisocyanate	Methylenebis(4-isocyanatobenzene)
101-68-8	Methane diphenyl diisocyanate	Methylenebis(4-phenyl isocyanate)
101-68-8	Methane diphenyl diisocyanate	Methylenebis(4-phenylene isocyanate)
101-68-8	Methane diphenyl diisocyanate	Methylenebis(p-phenyl isocyanate)
101-68-8	Methane diphenyl diisocyanate	Methylenebis(p-phenylene isocyanate)
101-68-8	Methane diphenyl diisocyanate	Methylenedi-p-phenylene diisocyanate
101-68-8	Methane diphenyl diisocyanate	Methylenedi-p-phenylene isocyanate
101-68-8	Methane diphenyl diisocyanate	p,p-Methylenebis(phenyl isocyanate)
101-68-8	Methane diphenyl diisocyanate	p,p'-Diphenylmethane diisocyanate
101-77-9	Methylenedianiline, 4,4'-	
101-80-4	Diaminodiphenyl ether, 4,4'-	
103-23-1	Bis(2-ethylhexyl) adipate	
104-76-7	Ethyl hexanol, 2-	
104-94-9	Anisidine, p-	
105-67-9	Dimethyl phenol, 2,4-	
106-42-3	Xylene, p-	
106-44-5	Cresol, p-	
106-46-7	Dichlorobenzene, 1,4-	
106-50-3	Phenylenediamine, p-	
106-51-4	Quinone	
106-88-7	Butylene oxide, 1,2-	
106-89-8	Epichlorohydrin	
106-93-4	Dibromoethane, 1,2-	Ethylene dibromide

CAS #	CHEMICAL NAME	SYNONYMS
106-99-0	Butadiene, 1,3-	
107-02-8	Acrolein	2-Propen-1-one
107-02-8	Acrolein	2-Propenal (9CI)
107-02-8	Acrolein	Acryaldehyde
107-02-8	Acrolein	Acrylic aldehyde
107-02-8	Acrolein	Allyl aldehyde
107-02-8	Acrolein	Aqualin
107-02-8	Acrolein	Magnacide H
107-02-8	Acrolein	NSC 8819
107-02-8	Acrolein	Prop-2-en-1-al
107-02-8	Acrolein	Propenal
107-05-1	Allyl chloride	
107-06-2	Dichloroethane, 1,2-	Ethylene dichloride
107-13-1	Acrylonitrile	2-Propenenitrile (9CI)
107-13-1	Acrylonitrile	Acrylon
107-13-1	Acrylonitrile	Carbacryl
107-13-1	Acrylonitrile	Cyanoethene
107-13-1	Acrylonitrile	Cyanoethylene
107-13-1	Acrylonitrile	Fumigrain
107-13-1	Acrylonitrile	Propenenitrile
107-13-1	Acrylonitrile	VCN
107-13-1	Acrylonitrile	Ventox
107-13-1	Acrylonitrile	Vinyl cyanide
107-21-1	Ethylene glycol	1,2-Dihydroxyethane
107-21-1	Ethylene glycol	1,2-Ethanediol (9CI)
107-21-1	Ethylene glycol	2-Hydroxyethanol
107-21-1	Ethylene glycol	Dowtherm SR 1
107-21-1	Ethylene glycol	Ethylene alcohol
107-21-1	Ethylene glycol	Ethylene dihydrate
107-21-1	Ethylene glycol	Fridex
107-21-1	Ethylene glycol	Glycol alcohol
107-21-1	Ethylene glycol	Glycol (6CI, 7CI)
107-21-1	Ethylene glycol	Macrogol 400 BPC
107-21-1	Ethylene glycol	Monoethylene glycol
107-21-1	Ethylene glycol	Norkool
107-21-1	Ethylene glycol	Ramp
107-21-1	Ethylene glycol	Tescol

CAS #	CHEMICAL NAME	SYNONYMS
107-21-1	Ethylene glycol	Ucar 17
107-21-1	Ethylene glycol	Zerex
107-30-2	Chloromethyl methyl ether	
107-41-5	Hexylene glycol	
107-77-9	Methylene dianiline	
107-98-2	Propylene glycol methyl ether	
108-05-4	Vinyl acetate	
108-10-1	Methyl isobutyl ketone	2-Methyl-4-pentanone
108-10-1	Methyl isobutyl ketone	2-Methylpropyl methyl ketone
108-10-1	Methyl isobutyl ketone	2-Pentanone, 4-methyl- (7CI, 8CI, 9CI)
108-10-1	Methyl isobutyl ketone	4-Methyl-2-oxopentane
108-10-1	Methyl isobutyl ketone	4-Methyl-2-pentanone
108-10-1	Methyl isobutyl ketone	Hexone
108-10-1	Methyl isobutyl ketone	Isobutyl methyl ketone
108-10-1	Methyl isobutyl ketone	Isopropylacetone
108-10-1	Methyl isobutyl ketone	MIBK
108-10-1	Methyl isobutyl ketone	MIK
108-21-4	Isopropyl acetate	
108-31-6	Maleic anhydride	2,5-Furandione (9CI)
108-31-6	Maleic anhydride	BM 10
108-31-6	Maleic anhydride	cis-Butenedioic anhydride
108-31-6	Maleic anhydride	Dihydro-2,5-dioxofuran
108-31-6	Maleic anhydride	Maleic acid anhydride
108-31-6	Maleic anhydride	Toxilic anhydride
108-38-3	Xylene, m-	
108-39-4	Cresol, m-	
108-60-1	Bis(2-chloro-1-methylethyl) ether	
108-62-3	Methaldehyde	
108-65-6	Propylene glycol monomethyl ether acetate	
108-69-0	Dimethylaniline, 3,5-	
108-78-1	Melamine	
108-83-8	Diisobutyl ketone	
108-88-3	Toluene	Antisal 1a
108-88-3	Toluene	Benzene, methyl- (9CI)

CAS #	CHEMICAL NAME	SYNONYMS
108-88-3	Toluene	CP 25
108-90-7	Monochlorobenzene	Benzene, chloro- (8CI, 9CI)
108-90-7	Monochlorobenzene	Chlorobenzene**
108-90-7	Monochlorobenzene	CP 27
108-90-7	Monochlorobenzene	I.P. Carrier T 40
108-90-7	Monochlorobenzene	MCB
108-90-7	Monochlorobenzene	Phenyl chloride
108-90-7	Monochlorobenzene	Tetrosin SP
108-95-2	Phenol	Benzenol
108-95-2	Phenol	Carbolic acid
108-95-2	Phenol	ENT 1814
108-95-2	Phenol	Hydroxybenzene
108-95-2	Phenol	Monohydroxybenzene
108-95-2	Phenol	Monophenol
108-95-2	Phenol	Oxybenzene
108-95-2	Phenol	Phenic acid
108-95-2	Phenol	Phenyl alcohol**
108-95-2	Phenol	Phenyl hydrate
108-95-2	Phenol	Phenyl hydroxide
108-95-2	Phenol	Phenylic acid
108-95-2	Phenol	Phenylic alcohol
109-55-7	Dimethyl-1,3-diamino propane, n,n-	
109-86-4	Methoxyethanol, 2-	
109-87-5	Methylal	
109-89-7	Diethylamine	
109-99-9	Tetrahydrofuran	
110-12-3	Methyl-2-hexanone, 5-	
110-19-0	Isobutyl acetate	
110-43-0	Methyl-n-amyl ketone	
110-54-3	Hexane	
110-80-5	Ethoxyethanol, 2-	
110-80-5	Ethylene glycol ethyl ether	2-Ethoxyethanol
110-80-5	Ethylene glycol ethyl ether	2-Ethoxyethyl alcohol
110-80-5	Ethylene glycol ethyl ether	Cellosolve
110-80-5	Ethylene glycol ethyl ether	Dowanol EE
110-80-5	Ethylene glycol ethyl ether	Ektasolve EE

CAS #	CHEMICAL NAME	SYNONYMS
110-80-5	Ethylene glycol ethyl ether	Emkanol
110-80-5	Ethylene glycol ethyl ether	Ethanol, 2-ethoxy- (8CI, 9CI)
110-80-5	Ethylene glycol ethyl ether	Ethyl Cellosolve
110-80-5	Ethylene glycol ethyl ether	Ethylene glycol monoethyl ether
110-80-5	Ethylene glycol ethyl ether	Glycol monoethyl ether
110-80-5	Ethylene glycol ethyl ether	Oxitol
110-80-5	Ethylene glycol ethyl ether	Poly-Solv EE
110-80-5	Ethylene glycol ethyl ether	.beta.-Ethoxyethanol
110-82-7	Cyclohexane	Benzene, hexahydro-
110-82-7	Cyclohexane	Hexahydrobenzene
110-82-7	Cyclohexane	Hexamethylene
110-82-7	Cyclohexane	Hexanaphthene
110-86-1	Pyridene	Azabenzene
110-86-1	Pyridene	Azine
110-86-1	Pyridene	CP 32
111-15-9	Ethylene glycol ethyl ether acetate	Cellosolve Acetate
111-30-8	Glutaraldehyde	
111-42-2	Diethanolamine	
111-44-4	Bis(2-chloroethyl) ether	
111-65-9	Octane	
111-76-2	Ethylene glycol butyl ether	Butyl Cellosolve
111-90-0	Diethylene glycol monoethyl ether	
112-12-5	Diethylene glycol monoethyl ether acetate	
112-25-4	Ethylene glycol monohexyl ether	
112-34-5	Diethylene glycol monobutyl ether	
112-80-1	Oleic acid	
114-26-1	Propoxur	Phenol, 2-(1-methyloxy)-methylcarbamate
115-07-1	Propylene	Propene
115-10-6	Dimethyl ether	
115-32-2	Dicofol	Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl
117-79-3	Aminoanthraquinone, 2-	
117-81-7	Dioctyl phthalate	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester (9CI)
117-81-7	Dioctyl phthalate	2-Ethylhexyl phthalate
117-81-7	Dioctyl phthalate	Blaoflex 81

C A S #	CHEMICAL NAME	SYNONYMS
117-81-7	Dioctyl phthalate	Bisoflex DOP
117-81-7	Dioctyl phthalate	Bis(2-ethylhexyl) 1,2-benzenedicarboxylate
117-81-7	Dioctyl phthalate	Bis(2-ethylhexyl) o-phthalate
117-81-7	Dioctyl phthalate	Bis(2-ethylhexyl) phthalate**
117-81-7	Dioctyl phthalate	Compound 889
117-81-7	Dioctyl phthalate	DEHP**
117-81-7	Dioctyl phthalate	Di'2-ethylhexyl) phthalate
117-81-7	Dioctyl phthalate	Di(ethylhexyl) phthalate**
117-81-7	Dioctyl phthalate	DOF
117-81-7	Dioctyl phthalate	DOF (Russian plasticizer)
117-81-7	Dioctyl phthalate	DOP
117-81-7	Dioctyl phthalate	Ergoplast FDO
117-81-7	Dioctyl phthslate	Ergoplast FDO-S
117-81-7	Dioctyl phthalate	Ethylhexyl phthalate
117-81-7	Dioctyl phthalate	Evlplast 80
117-81-7	Dioctyl phthalate	Evlplast 81
117-81-7	Dioctyl phthalate	Fleximel
117-81-7	Dioctyl phthalate	Flexol DOP
117-81-7	Dioctyl phthalate	Good-rite GP 264
117-81-7	Dioctyl phthalate	Kodaflex DOP
117-81-7	Dioctyl phthalate	Octoil
117-81-7	Dioctyl phthalate	Palatinol AH
117-81-7	Dioctyl phthalate	Phthalic acid, bis(2-ethylhexyl) ester (8CI)
117-81-7	Dioctyl phthalate	Pittsburgh PX-138
117-81-7	Dioctyl phthalate	Reomol D 79P
117-81-7	Dioctyl phthalate	Sicol 150
117-81-7	Dioctyl phthalate	Staflex DOP
117-81-7	Dioctyl phthalate	Truflex DOP
117-81-7	Dioctyl phthalate	Vestinol AH
117-81-7	Dioctyl phthalate	Vinicizer 80
117-81-7	Dioctyl phthalate	Witcizer 312
117-84-0	Dioctyl phthalate, n-	
118-74-1	Hexachlorobenzene	
119-36-8	Methyl salicylate	
119-90-4	Dimethoxybenzidine, 3,3'-	
119-93-7	Dimethylbenzidine, 3,3'-	o-Tolidine
120-12-7	Anthracene	
120-71-8	Cresidine, p-	
120-78-5	Mercapto benzothiazole disulphide	

CAS #	CHEMICAL NAME	SYNONYMS
120-80-9	Catechol	
120-82-1	Trichlorobenzene, 1,2,4-	1,2,4-Trichlorobenzol
120-82-1	Trichlorobenzene, 1,2,4-	1,2,5-Trichlorobenzene
120-82-1	Trichlorobenzene, 1,2,4-	1,3,4-Trichlorobenzene
120-82-1	Trichlorobenzene, 1,2,4-	Benzene, 1,2,4-trichloro (8CI, 9CI)
120-82-1	Trichlorobenzene, 1,2,4-	Hostetex L-PEC
120-82-1	Trichlorobenzene, 1,2,4-	unsym-Trichlorobenzene
120-83-2	Dichlorphenol, 2,4-	
121-14-2	Dinitrotoluene, 2,4-	
121-69-7	Dimethylaniline, n,n-	
121-75-5	Malathion	
122-39-4	Diphenylamine	
123-31-9	Hydroquinone	
123-38-6	Propionaldehyde	1-Propanal
123-38-6	Propionaldehyde	1-Propanone
123-38-6	Propionaldehyde	Methylacetaldehyde
123-38-6	Propionaldehyde	N-Propanal
123-38-6	Propionaldehyde	Propaldehyde
123-38-6	Propionaldehyde	Propanal (9CI)
123-38-6	Propionaldehyde	Propanaldehyde
123-38-6	Propionaldehyde	Propional
123-38-6	Propionaldehyde	Proplonic aldehyde
123-38-6	Propionaldehyde	Propylaldehyde
123-38-6	Propionaldehyde	Propylic aldehyde
123-42-2	Diacetone alcohol	
123-62-6	Propionic anhydride (as Propionic acid)	
123-72-8	Butyraldehyde	
123-86-4	Butyl acetate, n-	
123-91-1	Dioxane, 1,4-	1,4-Diethylene dioxide
123-91-1	Dioxane, 1,4-	1,4-Dioxan
123-91-1	Dioxane, 1,4-	1,4-Dioxcyclohexane
123-91-1	Dioxane, 1,4-	1,4-Dioxin, tetrahydro-
123-91-1	Dioxane, 1,4-	Diethylene dioxide
123-91-1	Dioxane, 1,4-	Diethylene ether
123-91-1	Dioxane, 1,4-	Diethylene oxide

CAS #	CHEMICAL NAME	SYNONYMS
123-91-1	Dioxane, 1,4-	Dioxan
123-91-1	Dioxane, 1,4-	Dioxane
123-91-1	Dioxane, 1,4-	Dioxyethylene ether
123-91-1	Dioxane, 1,4-	NE 220
123-91-1	Dioxane, 1,4-	p-Dioxan
123-91-1	Dioxane, 1,4-	p-Dioxan (8CI)
123-95-5	Butyl Stearate	
124-17-4	Diethylene glycol monobutyl ether acetate	
124-18-5	Decane, n-	
124-40-3	Dimethyl amine	
126-72-7	Tris (2,3-dibromopropyl) phosphate	
126-99-8	Chloroprene	
127-18-4	Perchloroethylene	1,1,2,2-tetrachloroethene
127-18-4	Perchloroethylene	1,1,2,2-tetrachloroethylene
127-18-4	Perchloroethylene	Ankilostin
127-18-4	Perchloroethylene	Antisal 1
127-18-4	Perchloroethylene	Didakene
127-18-4	Perchloroethylene	Dilatin PT
127-18-4	Perchloroethylene	Ethene, tetrachloro- (9CI)
127-18-4	Perchloroethylene	Ethylene tetrachloride**
127-18-4	Perchloroethylene	Ethylene, tetrachloro- (8CI)
127-18-4	Perchloroethylene	Fedal-Un
127-18-4	Perchloroethylene	Freon 1110
127-18-4	Perchloroethylene	Nema
127-18-4	Perchloroethylene	Perclene
127-18-4	Perchloroethylene	PerSec
127-18-4	Perchloroethylene	Tetlen
127-18-4	Perchloroethylene	Tetracap
127-18-4	Perchloroethylene	tetrachloroethene
127-18-4	Perchloroethylene	Tetrachloroethylene
127-18-4	Perchloroethylene	Tetraguer
127-18-4	Perchloroethylene	Tetraleno
127-18-4	Perchloroethylene	Tetropil
127-20-8	Dalapon sodium salt	
128-66-5	C.I. Vat Yellow 4*	
131-11-3	Dimethyl phthalate	1,2-Benzenedicarboxylic acid, dimethyl ester (9CI)

CAS #	CHEMICAL NAME	SYNONYMS
131-11-3	Dimethyl phthalate	Avolin
131-11-3	Dimethyl phthalate	Dimethyl 1,2-benzenedicarbylate
131-11-3	Dimethyl phthalate	Dimethyl o-phthalate
131-11-3	Dimethyl phthalate	DMF (insect repellent)
131-11-3	Dimethyl phthalate	DMP
131-11-3	Dimethyl phthalate	Fermine
131-11-3	Dimethyl phthalate	Mipax
131-11-3	Dimethyl phthalate	NTM
131-11-3	Dimethyl phthalate	Palatinol M
131-11-3	Dimethyl phthalate	Phthalic acid, dimethyl ester(6CI, 8CI)
131-11-3	Dimethyl phthalate	Repeftal
131-11-3	Dimethyl phthalate	Solvanom
131-11-3	Dimethyl phthalate	Solvarone
131-11-3	Dimethyl phthalate	Unimoll DM
131-15-7	Dicapryl phthalate	
132-64-9	Dibenzofuran	
133-06-2	Captan	1H-Isoindole-1,3(2H)-dione
133-06-2	Captan	3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-(9CI)
133-06-2	Captan	4-Cyclohexene-1,2-dicarboximide-N-[(trichloromethyl)thio]-(8CI)
133-06-2	Captan	Aacaptan
133-06-2	Captan	Amercide
133-06-2	Captan	Bangton
133-06-2	Captan	Captaf
133-06-2	Captan	Captan 50W
133-06-2	Captan	Esso fungicide 046
133-06-2	Captan	Flit 406
133-06-2	Captan	Fungus ban type II
133-06-2	Captan	Glyodex 37-22
133-06-2	Captan	Hexacap
133-06-2	Captan	Kaptan
133-06-2	Captan	Mallpur
133-06-2	Captan	Merpan
133-06-2	Captan	Micro-check 12
133-06-2	Captan	Neracid
133-06-2	Captan	N-Trichloromethyl thio-3a,4,7,7a-tetrahydro phthalimide
133-06-2	Captan	N-[(Trichloromethyl)thio] tetrahydrophthalimide
133-90-4	Chloramben	2,5-Dichloro-3-aminobenzoic acid
133-90-4	Chloramben	3-Amino-2,5-dichlorobenzoic acid

CAS #	CHEMICAL NAME	SYNONYMS
133-90-4	Chloramben	Ambiben
133-90-4	Chloramben	Amiben
133-90-4	Chloramben	Amibin
133-90-4	Chloramben	Amoben
133-90-4	Chloramben	Benzoic acid, 3-amino-2,5-dichloro- (8CI,9CI)
133-90-4	Chloramben	Vegiben
134-29-2	Anisidine hydrochloride, ortho-	
134-32-7	Naphthylamine, alpha-	
135-20-6	Cupferron	Benzeneamine, N-hydroxy-N-nitroso ammonium salt
139-65-1	Thiodianiline, 4,4'-	
140-88-5	Ethyl acrylate	2-Propenoic acid, ethyl ester
140-88-5	Ethyl acrylate	2-Propenoic acid, ethyl ester (9CI)
140-88-5	Ethyl acrylate	Acrylic acid ethyl ester (6CI, /8/ci0
140-88-5	Ethyl acrylate	Ethyl 2-propenoate
140-88-5	Ethyl acrylate	Ethyl propenoate
141-32-2	Butyl acrylate	2-Propenoic acid butyl ester
141-32-2	Butyl acrylate	2-Propenoic acid, butyl ester (9CI)
141-32-2	Butyl acrylate	Acryl acid butyl ester (6CI, 8CI)
141-32-2	Butyl acrylate	Butyl 2-propenoate
141-78-6	Ethyl acetate	
143-33-9	Sodium cyanide	
144-62-7	Oxalic acid	
151-50-8	Potassium cyanide	
151-56-4	Ethyleneimine	Aziridine
156-10-5	Nitrosodiphenylamine, p-	
156-62-7	Calcium cyanamide	
189-55-9	Dibenzo[a,l]pyrene	
189-64-0	Dibenzo[a,h]pyrene	
191-30-0	Dibenzo[a,l]pyrene	
192-65-0	Dibenzo[a,e]pyrene	
193-39-5	Indeno[1,2,3,cd]pyrene	
205-08-9	Benzo[k]fluoranthene	
205-82-3	Benzo[j]fluoranthene	
205-99-2	Benzo[b]fluoranthene	

CAS #	CHEMICAL NAME	SYNONYMS
224-42-0	Dibenz[a,jh]acridine	
226-36-8	Dibenz[a,h]acridine	
302-01-2	Hydrazine	
309-00-2	Aldrin	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexah
314-40-9	Bromacil	
333-41-5	Diazinon	
334-88-3	Diazomethane	
463-58-1	Carbonyl sulphide	
492-80-8	C.I. Solvent Yellow 34*	Auramine
505-60-2	Mustard gas	Ethane, 1,1'-thiobis[2-chloro-
506-77-4	Cyanogen chloride	
510-15-6	Chlorobenzilate	Benzeneacetic acid, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-hydroxy ethy
532-27-4	Chloroacetophenone	
534-52-1	Dinitro-o-cresol, 4,6-	
540-59-0	Dichloroethylene, 1,,2-	
541-41-3	Ethyl chloroformate	
541-73-1	Dichlorobenzene, 1,3-	
542-75-6	Dichloropropylene	
542-88-1	Bis(chloromethyl) ether	
548-73-2	Droperidol	
569-64-2	C.I. Basic Green 4*	
584-84-9	Toluene-2,4-diisocyanate	2,4-Diisocyanato-1-methylbenzene
584-84-9	Toluene-2,4-diisocyanate	2,4-Diisocyanatotoluene
584-84-9	Toluene-2,4-diisocyanate	2,4-TDI
584-84-9	Toluene-2,4-diisocyanate	2,4-Toluene diisocyanate
584-84-9	Toluene-2,4-diisocyanate	2,4-Tolylene diisocyanate
584-84-9	Toluene-2,4-diisocyanate	4-Methyl-m-phenylene diisocyanate
584-84-9	Toluene-2,4-diisocyanate	4-Methyl-m-phenylene isocyanate
584-84-9	Toluene-2,4-diisocyanate	Benzene, 2,4-diisocyanate
584-84-9	Toluene-2,4-diisocyanate	Isocyanic acid, 4-Methyl-m-phenylene ester (8CI)
592-01-8	Calcium cyanide	
593-60-2	Vinyl bromide	
606-20-2	Dinitrotoluene, 2,6-	
608-93-5	Pentachlorobenzene	
615-05-4	Diaminoanisole, 2,4-	

C A S #	CHEMICAL NAME	SYNONYMS
621-64-7	Nitroso-n-propylamine, n-	
624-83-9	Methyl isocyanate	
624-92-0	Dimethyl disulphide	[n,n-Dimethylacetamide dimethyl disulphide
628-96-6	Ethylene glycol dinitrate	
630-08-0	Carbon monoxide	
636-21-5	Toluidine hydrochloride, o-	
646-06-0	Dioxolane	
680-31-9	Hexamethylphosphoramide	
684-93-5	Nitroso-n-methylurea, n-	n-Methyl-n-nitrosourea
756-79-6	Dimethyl methylphosphonate	
759-73-9	Nitroso-n-ethylurea, n-	
763-69-9	Ethyl-3-ethoxy propionate	
822-06-0	Hexamethylene diisocyanate monomer	
842-07-9	C.I. Solvent Yellow 14*	
872-05-9	Decene, 1-	
872-50-4	Methyl-2-pyrrolidone, n-	
924-16-3	Nitrosodi-n-butylamine, n-	
961-11-5	Tetrachlorvinphos	Phosphoric acid, 2-chloro-1-(2,3,5-trichlorophenyl) ethenyldimethyl ester
989-38-8	C.I. Basic Red 1*	
990-73-8	Fentanyl citrate	
999-97-3	Hexamethyl disilazane	
1120-71-4	Propane sultone	
1121-71-2	Ethylene glycol butyl ether acetate	Butyl Cellosolve Acetate
1163-19-5	Decabromodiphenyl oxide	
1305-62-0	Calcium hydroxide	
1305-78-8	Calcium oxide	
1309-37-1	Ferric oxide	
1309-48-4	Magnesium oxide	
1310-58-3	Potassium hydroxide	
1310-73-2	Sodium hydroxide	Aetznatron
1310-73-2	Sodium hydroxide	Ascarite
1310-73-2	Sodium hydroxide	Caustic soda
1310-73-2	Sodium hydroxide	Collo-Grillrein
1310-73-2	Sodium hydroxide	Collo-Tapetta
1310-73-2	Sodium hydroxide	Soda, caustic

CAS #	CHEMICAL NAME	SYNONYMS
1310-73-2	Sodium hydroxide	Sodium hydroxide (Na(OH)) (9CI)
1310-73-2	Sodium hydroxide	White caustic
1313-27-5	Molybdenum trioxide	
1314-11-0	Strontium oxide	
1314-20-1	Thorium dioxide	
1319-77-3	Cresols	ar-Toluenol
1319-77-3	Cresols	Bacillol
1319-77-3	Cresols	Cresol (8CI)
1319-77-3	Cresols	Cresylic acid
1319-77-3	Cresols	Hydroxytoluene
1319-77-3	Cresols	Methylphenol
1319-77-3	Cresols	Phenol, methyl- (9CI)
1319-77-3	Cresols	Tekresol
1319-77-3	Cresols	Tricresol
1320-37-2	Dichloro-1,1,2,2,-tetrafluoro ethane, 1,1-	Freon 114
1330-20-7	Xylenes	Benzene, dimethyl- (9CI)
1330-20-7	Xylenes	Dilan
1330-20-7	Xylenes	Dimethylbenzene
1330-20-7	Xylenes	Xylene (8CI)
1330-20-7	Xylenes	Xylol
1332-21-4	Asbestos	4T04
1332-21-4	Asbestos	7N05
1332-21-4	Asbestos	7RF10
1332-21-4	Asbestos	Asbestos synthetic fibres
1332-21-4	Asbestos	Aabestos, fibres
1332-21-4	Asbestos	AT 7-1
1332-21-4	Asbestos	Calidrea HPP
1332-21-4	Asbestos	Calidria R-G 244
1332-21-4	Asbestos	Chlorobestos 25
1332-21-4	Asbestos	FAPM 410-120
1332-21-4	Asbestos	Ferodo C3C
1332-21-4	Asbestos	K 6-2-
1332-21-4	Asbestos	M 3-60
1332-21-4	Asbestos	M 4-5
1332-21-4	Asbestos	M 5-60
1332-21-4	Asbestos	Mountain cork

C A S #	CHEMICAL NAME	SYNONYMS
1332-21-4	Asbestos	Mountain leather
1332-21-4	Asbestos	Mountain wood
1332-21-4	Asbestos	P 5-50
1332-21-4	Asbestos	Syntheic fibres, abestos
1333-86-4	Carbon black	
1335-87-1	Hexachloronaphthalene	
1336-36-3	Polychlorinated biphenyls (PCBs)	1,1'-Biphenyl, chloro derivs
1336-36-3	Polychlorinated biphenyls (PCBs)	Biphenyl, chlorinated
1336-36-3	Polychlorinated biphenyls (PCBs)	Chlorinated biphenyl
1336-36-3	Polychlorinated biphenyls (PCBs)	Chlorinated diphenyl
1336-36-3	Polychlorinated biphenyls (PCBs)	Diphenyl, chlorinated
1338-23-4	Methyl ethyl ketone peroxide	
1344-28-1	Aluminum oxide	1001M
1344-28-1	Aluminum oxide	1100H24
1344-28-1	Aluminum oxide	5N
1344-28-1	Aluminum oxide	A 00
1344-28-1	Aluminum oxide	A 97
1344-28-1	Aluminum oxide	A 99
1344-28-1	Aluminum oxide	A 99 (metal)
1344-28-1	Aluminum oxide	A 999
1344-28-1	Aluminum oxide	A 99N
1344-28-1	Aluminum oxide	AA 1099
1344-28-1	Aluminum oxide	AA 1193
1344-28-1	Aluminum oxide	AA 1199
1344-28-1	Aluminum oxide	AA 15
1344-28-1	Aluminum oxide	AC 1000
1344-28-1	Aluminum oxide	AC 1003
1344-28-1	Aluminum oxide	AE
1344-28-1	Aluminum oxide	Alloy 1199
1344-28-1	Aluminum oxide	Alpaste
1344-28-1	Aluminum oxide	Alpaste 0230T
1344-28-1	Aluminum oxide	Alpaste 0241M
1344-28-1	Aluminum oxide	Alpaste 100MS
1344-28-1	Aluminum oxide	Alpaste 240T
1344-28-1	Aluminum oxide	Alpaste 51-231
1344-28-1	Aluminum oxide	Alpaste 53-119
1344-28-1	Aluminum oxide	Aluminium flake

CAS #	CHEMICAL NAME	SYNONYMS
1344-28-1	Aluminum oxide	Aiuminum A 00
1344-28-1	Aluminum oxide	Aluminum Dehydrated
1344-28-1	Aluminum oxide	Aluminum element
1344-28-1	Aluminum oxide	Aluminum powder
1344-28-1	Aluminum oxide	Aluminum-27
1344-28-1	Aluminum oxide	AR 2
1344-28-1	Aluminum oxide	AV00
1344-28-1	Aluminum oxide	c.i. 77000
1344-28-1	Aluminum oxide	HS 2
1344-28-1	Aluminum oxide	JISC 3108
1344-28-1	Aluminum oxide	JISC 3110
1344-28-1	Aluminum oxide	K 102
1344-28-1	Aluminum oxide	K 102 (metal)
1344-28-1	Aluminum oxide	L 1018
1344-28-1	Aluminum oxide	L 16
1344-28-1	Aluminum oxide	Metana
1344-28-1	Aluminum oxide	Noral Aluminium
1344-28-1	Aluminum oxide	Noral Extra Fine Lining Grade
1344-28-1	Aluminum oxide	Noral Ink Grade Aluminium
1344-28-1	Aluminum oxide	PAP 1
1344-28-1	Aluminum oxide	PO 100
1344-28-1	Aluminum oxide	PO 100 (metal)
1344-28-1	Aluminum oxide	S 40
1344-28-1	Aluminum oxide	S 40 (metal)
1344-28-1	Aluminum oxide	SAP 120
1344-28-1	Aluminum oxide	SAP 725N
1344-28-1	Aluminum oxide	Spota Mobil 801
1344-28-1	Aluminum oxide	STAPA 20HK
1344-28-1	Aluminum oxide	Tuff Mic
1344-28-1	Aluminum oxide	UT 901
1344-28-1	Aluminum oxide	VI 5
1395-21-7	Detergent enzyme	Subtilisin
1406-05-9	Penicillin	
1464-53-5	Diepoxybutane	
1582-09-8	Trifluralin	Benzenamine, 2,6-dinitro-N-,N-dipropyl-'4-(trifluoromethyl)-
1633-05-2	Strontium carbonate	
1634-04-4	Methyl tert-butyl ether	
1836-75-5	Nitrofen	Benzene, 2,4,-dichloro-1-(4-nitrophenoxy)
1886-81-3	Dodecyl benzene sulphonic acid	

CAS #	CHEMICAL NAME	SYNONYMS
1897-45-6	Chlorothalonil	1,3-Benzenedicarbonitrile, 2,4,5,6-tetrachloro-
1910-42-5	Paraquat dichloride - respirable	
1910-42-5	Paraquat dichloride - total in ambient air	
1937-37-7	C.I. Direct Black 38*	
2062-78-4	Pimozide	
2164-17-2	Fluometon	Urea, n,n-dimethyl-n'-[3-(trifluoromethyl) phenyl]-
2234-13-1	Octachloronaphthalene	
2303-16-4	Diallate	Carbamothioic acid, bis(1-methylethyl)-S-(2,3-dichloro-2-propenyl) ester
2551-62-4	Sulphur hexafluoride	
2602-46-2	C.I. Direct Blue 6*	
2832-40-8	C.I. Disperse Yellow 3*	
2987-53-3	Methyl mercapto aniline	
3268-87-9	Octachloro dibenzo-p-dioxins	
3118-97-6	C.I. Solvent Orange 7*	
3697-24-3	Methylchrysene, 5-	
3761-53-3	C.I. Food Red 5*	
4035-89-6	Hexamethylene diisocyanate trimer	
4549-40-0	Nitrosomethylvinylamine, N	
4680-78-8	C.I. Acid Green 3*	
6484-52-2	Ammonium nitrate (solution)	
7429-90-5	Aluminum	
7439-92-1	Lead and compounds	C.I. 77575
7439-92-1	Lead and compounds	C.I. Pigment metal 4
7439-92-1	Lead and compounds	Lead element
7439-92-1	Lead and compounds	Lead flake
7439-92-1	Lead and compounds	Lead S 2
7439-92-1	Lead and compounds	Pb-S 100
7439-92-1	Lead and compounds	SO
7439-96-5	Manganese compounds (as Mn) - including permanganates	Colloidal manganese
7439-96-5	Manganese compounds (as Mn) - including permanganates	Cutaval
7439-96-5	Manganese compounds (as Mn) - including permanganates	JIS-G 1213
7439-96-5	Manganese compounds (as Mn) - including permanganates	Manganese element
7439-96-5	Manganese compounds (as Mn) - including permanganates	Manganese-55
7439-97-6	Mercury	Mercury element

CAS #	CHEMICAL NAME	SYNONYMS
7439-97-6	Mercury	Queckailber
7439-97-6	Mercury	Quickaliver
7439-98-7	Molybdenum	
7440-02-0	Nickel	C.I. 77775
7440-02-0	Nickel	FM 1208
7440-02-0	Nickel	HCA 1
7440-02-0	Nickel	N1
7440-02-0	Nickel	Ni 0901S (Harshaw)
7440-02-0	Nickel	Ni 233
7440-02-0	Nickel	Ni 270
7440-02-0	Nickel	Nickel 270
7440-02-0	Nickel	Nickel 4303T
7440-02-0	Nickel	Nickel element
7440-02-0	Nickel	NP 2
7440-02-0	Nickel	Raney alloy
7440-02-0	Nickel	Raney nickel
7440-02-0	Nickel	RCH 55/5
7440-06-4	Platinum - water soluble compounds	
7440-22-4	Silver	Algaedyn
7440-22-4	Silver	Argentum
7440-22-4	Silver	C.I. 77820
7440-22-4	Silver	E 20
7440-22-4	Silver	L 3
7440-22-4	Silver	Shell silver
7440-22-4	Silver	Silflake 135
7440-22-4	Silver	Silpowder 130
7440-22-4	Silver	Silver atom
7440-22-4	Silver	Silver element
7440-22-4	Silver	Silver metal
7440-22-4	Silver	Silvest TCG 1
7440-22-4	Silver	Sr 999
7440-22-4	Silver	TCG 1
7440-22-4	Silver	TCG 7R
7440-22-4	Silver	V 9
7440-24-6	Strontium	
7440-28-0	Thallium	

CAS #	CHEMICAL NAME	SYNONYMS
7440-31-5	Tin	
7440-32-6	Titanium	
7440-36-0	Antimony and compounds	Antimony Black
7440-36-0	Antimony and compounds	Antimony element
7440-36-0	Antimony and compounds	C.I. 77050
7440-36-0	Antimony and compounds	Stibium
7440-38-2	Arsenic and compounds	Arsenic Black
7440-38-2	Arsenic and compounds	Arsenic element
7440-38-2	Arsenic and compounds	Arsenic-75
7440-39-3	Barium-total water soluble	Barium element
7440-41-7	Beryllium and compounds	Beryllium element
7440-41-7	Beryllium and compounds	Beryllium-9
7440-41-7	Beryllium and compounds	Glucinium
7440-42-8	Boron	
7440-43-9	Cadmium and compounds	Cadmium element
7440-43-9	Cadmium and compounds	C.I. 77180
7440-47-3	Chromium - di-, tri- and hexavalent forms	Chrome
7440-47-3	Chromium - di-, tri- and hexavalent forms	Chromium element
7440-50-8	Copper	1721 Gold
7440-50-8	Copper	Allbri Natural Copper
7440-50-8	Copper	Anac 110
7440-50-8	Copper	Arwood copper
7440-50-8	Copper	C 10200
7440-50-8	Copper	C 11000
7440-50-8	Copper	C 1100P
7440-50-8	Copper	C 12200
7440-50-8	Copper	CA 122
7440-50-8	Copper	CDA 101
7440-50-8	Copper	CDA 102
7440-50-8	Copper	CDA 110
7440-50-8	Copper	CDA 122
7440-50-8	Copper	CE 1110
7440-50-8	Copper	CE 115

C A S #	CHEMICAL NAME	SYNONYMS
7440-50-8	Copper	Copper element
7440-50-8	Copper	Copper M 1
7440-50-8	Copper	Copper Powder
7440-50-8	Copper	Cu 102
7440-50-8	Copper	Cu M2
7440-50-8	Copper	CuEPP
7440-50-8	Copper	CuM3
7440-50-8	Copper	C.I. 77400
7440-50-8	Copper	C.I. Pigment Metal 2
7440-50-8	Copper	DCuP1
7440-50-8	Copper	E 115
7440-50-8	Copper	E 115 (metal)
7440-50-8	Copper	E-Copper
7440-50-8	Copper	E-Cu57
7440-50-8	Copper	GE 1110
7440-50-8	Copper	Kafar copper
7440-50-8	Copper	M 1
7440-50-8	Copper	M 3
7440-50-8	Copper	M3r
7440-50-8	Copper	M3s
7440-50-8	Copper	OFHC
7440-50-8	Copper	OFHC Copper
7440-50-8	Copper	OFHC Cu
7440-50-8	Copper	Rame
7440-50-8	Copper	Raney copper
7440-50-8	Copper	TAI
7440-50-8	Copper	TCuP1
7440-50-8	Copper	TTAI
7440-62-2	Vanadium	Vanadium element
7440-62-2	Vanadium	Vanadium-51
7440-66-6	Zinc	Asarco L15
7440-66-6	Zinc	Blue powder
7440-66-6	Zinc	LS 2
7440-66-6	Zinc	Rheinzink
7440-66-6	Zinc	Zinc element
7446-09-5	Sulphur dioxide	
7550-45-0	Titanium tetrachloride	
7580-67-8	Lithium hydrides	

CAS #	CHEMICAL NAME	SYNONYMS
7631-90-5	Sodium bisulphite	
7637-07-2	Boron trifluouride	
7646-85-7	Zinc chloride	
7647-01-0	Hydrogen chloride	Anhydrous hydrochloric acid
7647-01-0	Hydrogen chloride	Chlorohydric acid
7647-01-0	Hydrogen chloride	Dilute hydrochloric acid
7647-01-0	Hydrogen chloride	HCL
7647-01-0	Hydrogen chloride	Hydrochloric acid gas
7647-01-0	Hydrogen chloride	Muriatic acid
7657-10-1	Palladium - water soluble compounds	
7664-38-2	Phosphoric acid (as P2O5)	Decon 4512
7664-38-2	Phosphoric acid (as P2O5)	EVITs
7664-38-2	Phosphoric acid (as P2O5)	Orthophosphoric acid
7664-38-2	Phosphoric acid (as P2O5)	Sonac
7664-38-2	Phosphoric acid (as P2O5)	WC-Reiniger
7664-39-3	Fluorides (as HF)	Antisal 2b
7664-39-3	Fluorides (as HF)	Fluorhydric acis
7664-39-3	Fluorides (as HF)	Hydrofluoric acid gas
7664-39-3	Fluorides (as HF)	Hydrofluoric acid (8CI,9CI)
7664-39-3	Fluorides (as HF) - gaseous, during growing season	Hydrofluoric acid gas
7664-39-3	Fluorides (as HF) - total, during growing season	Hydrogen fluorides
7664-39-3	Fluorides (as HF) - total, during non-growing season	Anhydroua hydrofluoric acid
7664-39-3	Hydrogen fluoride	
7664-41-7	Ammonia	Ammonia gas
7664-41-7	Ammonia	Ammonium amide (7CI)
7664-41-7	Ammonia	Nitro-Sil
7664-41-7	Ammonia	R 717
7664-41-7	Ammonia	Spirit of Hartahorn
7664-93-9	Sulphuric acid	BOV
7664-93-9	Sulphuric acid	Dihydrogen sulphate
7664-93-9	Sulphuric acid	Dipping acid
7664-93-9	Sulphuric acid	Oil of vitriol
7664-93-9	Sulphuric acid	Sulfuric acid
7664-93-9	Sulphuric acid	Vitriol brown oil

C A S #	CHEMICAL NAME	SYNONYMS
7697-37-2	Nitric acid	Aqua fortis
7697-37-2	Nitric acid	Azotic acid
7697-37-2	Nitric acid	Hydrogen nitrate
7697-37-2	Nitric acid	Nital
7697-37-2	Nitric acid	Nitryl hydroxide
7722-84-1	Hydrogen peroxide	
7723-14-0	Phosphorus (yellow or white)	
7726-95-6	Bromine	
7740-48-4	Cobalt	Cobalt element
7740-48-4	Cobalt	Cobalt-59
7740-48-4	Cobalt	C.I. 77320
7757-79-1	Potassium nitrate	
7757-82-6	Sodium sulphate (solution)	
7758-19-2	Sodium chlorite	
7775-09-9	Sodium chlorate	
7782-49-2	Selenium	C.I. 77805
7782-49-2	Selenium	Selenium element
7782-50-5	Chlorine	Chlorine molecule (CL2)
7782-50-5	Chlorine	Chlorine mol.
7782-50-5	Chlorine	Diatomic chlorine
7782-50-5	Chlorine	Dichlorine
7782-50-5	Chlorine	Molecular chlorine
7783-06-4	Hydrogen sulphide	
7783-20-2	Ammonium sulphate	
7784-42-1	Arsine	
7803-51-2	Phosphine	
7803-62-5	Silane	
8001-35-2	Toxaphene	
8006-61-9	Gasoline	
8007-45-2	Coal tar pitch volatiles - soluble fraction	
10024-97-2	Nitrous oxide	
10025-87-3	Phosphorus oxychloride	

CAS #	CHEMICAL NAME	SYNONYMS
10026-13-8	Phosphorus pentachloride	
10028-15-6	Ozone	
10034-93-2	Hydrazine sulphate	
10035-10-6	Hydrogen bromide	
10049-04-4	Chlorine dioxide	Alcide Anthium Dioxcide
10049-04-4	Chlorine dioxide	Chlorine oxide (CL2) (8CI,9CI)
10049-04-4	Chlorine dioxide	Chlorine peroxide
10049-04-4	Chlorine dioxide	Chlorine(IV) oxide
10049-04-4	Chlorine dioxide	Chloroperoxyl
10049-04-4	Chlorine dioxide	Chloryl radical
10049-04-4	Chlorine dioxide	Doxcide 50
10049-04-4	Chlorine dioxide	EZ Flow
10049-04-4	Chlorine dioxide	Purogene
10102-44-0	Nitrogen oxides (as Nitrogen dioxide)	
10294-33-4	Boron tribromide	
10294-34-5	Boron trichloride	
12108-13-3	Methylcyclopentadienyl manganese tricarbonyl	MMT
12122-67-7	Zineb	Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex
12125-02-9	Ammonium chloride	
12427-38-2	Maneb	Carbamodithioic acid, 1,2-ethanediylbis-, manganese complex
13463-39-3	Nickel carbonyl	
13494-80-9	Tellurium - excluding hydrogen telluride	
14807-96-6	Talc - fibrous	
15438-31-0	Iron - metallic	
16071-86-6	C.I. Brown 95*	
16543-55-8	Nitrosonornicotine, N-	
17702-41-9	Decaborane	
18480-07-4	Strontium hydroxide	
18662-53-8	Nitrilotriacetic acid	
19287-45-7	Diborane	
19624-22-7	Pentaborane	
20816-12-0	Osmium tetroxide	
24391-00-3	Dodine	
25267-15-6	Polychloroprene	
25321-22-6	Dichlorobenzene (mixed isomers)	

C A S #	CHEMICAL NAME	SYNONYMS
25376-45-8	Diaminotoluene (mixed isomers)	
25377-83-7	Octene, 1-	
30402-15 4	Pentachloro dibenzofurans, P5CDs	
	1,2,3,7,8 Pentachloro dibenzofuran	
	2,3,4,7,8 Pentachloro dibenzofuran	
34465-46 8	Hexachloro dibenzo-p-dioxins, H6DDs	
	1,2,3,4,7,8 Hexachloro dibenzo-p-dioxin	
	1,2,3,6,7,8 Hexachloro dibenzo-p-dioxin	
	1,2,3,7,8,9 Hexachloro dibenzo-p-dioxin	
36008-22 9	Pentachloro dibenzo-p-dioxins, P5CDDs	
	1,2,3,7,8 Pentachloro dibenzo-p-dioxin	
37871-00 4	Heptachloro dibenzo-p-dioxins, H7CDDs	
	1,2,3,4,6,7,8 Heptachloro dibenzo-p-dioxin	
38993-75 3	Heptachloro dibenzofurans, H7CDFs	
	1,2,3,4,6,7,8 Heptachloro dibenzofuran	
	1,2,3,4,7,8,9 Heptachloro dibenzofuran	
39001-02 0	Octachloro dibenzofurans, OCDFs	
39156-41-7	Diaminoanisole aulphate, 2,4-	
41903-57 5	Tetrachloro dibenzo-p-dioxins, T4CDDs	
	2,3,7,8 Tetrachloro dibenzo-p-dioxin	
55684-94 1	Hexachloro dibenzofurans, H6CDFs	
	1,2,3,4,7,8 Hexachloro dibenzofuran	
	1,2,3,6,7,8 Hexachloro dibenzofuran	
	1,2,3,7,8,9 Hexachloro dibenzofuran	
	2,3,4,6,7,8 Hexachloro dibenzofuran	
51207-31 9	Tetrachloro dibenzofurans, T4CDFs	
	2,3,7,8 Tetrachloro dibenzofuran	
CYCLO SOL	Cyclo sol 63	
MILK POWDER	Milk powder	
TRS	Total reduced aulphur (as Hydrogen aulphide)	
TSP	Suspended particulate matter - under 44 um aero. diam.	

CAS #	CHEMICAL NAME	SYNONYMS
WHEY POWDER	Whey powder	

APPENDIX 2-3c

LIST OF CHEMICAL SUBSTANCES BY SYNONYMS
(in alphabetical order)

APPENDIX 2-3c

LIST OF CHEMICAL SUBSTANCES BY SYNONYMS (in alphbetical order)

CAS #	SYNONYMS	CHEMICAL NAME
	Alkyltoluene Sulphonamide, n-	Alkyltoluene Sulphonamide, n-
60-35-5	Acetamide	Acetamide
64-19-7	Acetic Acid	Acetic Acid
75-05-8	Acetonitrile	Acetonitrile
98-86-2	Acetophenone	Acetophenone
53-96-3	Acetylaminofluorene, 2-	Acetylaminofluorene, 2-
74-86-2	Acetylene	Acetylene
79-10-7	Acrylic acid	Acrylic acid
107-05-1	Allyl chloride	Allyl chloride
7429-90-5	Aluminum	Aluminum
117-79-3	Aminoanthraquinone, 2-	Aminoanthraquinone, 2-
60-09-3	Aminoazobenzene, 4-	Aminoazobenzene, 4-
92-67-1	Aminobiphenyl, 4-	Aminobiphenyl, 4-
82-28-0	Amino-2-methylanthraquinone, 1-	Amino-2-methylanthraquinone, 1-
12125-02-9	Ammonium chloride	Ammonium chloride
6484-52-2	Ammonium nitrate (solution)	Ammonium nitrate (solution)
7783-20-2	Ammonium sulphate	Ammonium sulphate
	Amyl acetate, n-	Amyl acetate, n-
	Amyl Acetate, secondary	Amyl Acetate, secondary
90-04-0	Anisidine, ortho-	Anisidine, ortho-
104-94-9	Anisidine, p-	Anisidine, p-
134-29-2	Anisidine hydrochloride, ortho-	Anisidine hydrochloride, ortho-
120-12-7	Anthracene	Anthracene
7784-42-1	Arsine	Arsine
98-87-3	Benzal chloride	Benzal chloride
55-21-0	Benzamide	Benzamide
92-87-5	Benzidine	Benzidine
95-16-9	Benzothiazole	Benzothiazole

CAS #	SYNONYMS	CHEMICAL NAME
94-36-0	Benzoyl peroxide	Benzoyl peroxide
205-99-2	Benzo[b]fluoranthene	Benzo[b]fluoranthene
205-82-3	Benzo[j]fluoranthene	Benzo[j]fluoranthene
205-08-9	Benzo[k]fluoranthene	Benzo[k]fluoranthene
100-44-7	Benzyl chloride	Benzyl chloride
56-55-3	Benz[a]anthracene	Benz[a]anthracene
111-44-4	Bis(2-chloroethyl) ether	Bis(2-chloroethyl) ether
108-60-1	Bis(2-chloro-1-methylethyl) ether	Bis(2-chloro-1-methylethyl) ether
103-23-1	Bis(2-ethylhexyl) adipate	Bis(2-ethylhexyl) adipate
542-88-1	Bis(chloromethyl) ether	Bis(chloromethyl) ether
	Borax	Borax
	Boric acid	Boric acid
7440-42-8	Boron	Boron
10294-33-4	Boron tribromide	Boron tribromide
10294-34-5	Boron trichloride	Boron trichloride
7637-07-2	Boron trifluouride	Boron trifluouride
314-40-9	Bromacil	Bromacil
7726-95-6	Bromine	Bromine
106-99-0	Butadiene, 1,3-	Butadiene, 1,3-
123-86-4	Butyl acetate, n-	Butyl acetate, n-
78-92-2	Butyl alcohol, sec-	Butyl alcohol, sec-
85-68-7	Butyl Benzyl phthalate	Butyl Benzyl phthalate
123-95-5	Butyl Stearate	Butyl Stearate
106-88-7	Butylene oxide, 1,2-	Butylene oxide, 1,2-
123-72-8	Butyraldehyde	Butyraldehyde
75-20-7	Calcium carbide	Calcium carbide
156-62-7	Calcium cyanamide	Calcium cyanamide
592-01-8	Calcium cyanide	Calcium cyanide
1305-62-0	Calcium hydroxide	Calcium hydroxide
1305-78-8	Calcium oxide	Calcium oxide
1333-86-4	Carbon black	Carbon black
463-58-1	Carbonyl sulphide	Carbonyl sulphide
120-80-9	Catechol	Catechol
PCDD/PCDF	Chlorinated Dibenzo Furans mixed with CDDs	Chlorinated Dibenzo Furans mixed with CDDs
79-11-8	Chloroacetic acid	Chloroacetic acid
532-27-4	Chloroacetophenone	Chloroacetophenone

CAS #	SYNONYMS	CHEMICAL NAME
107-30-2	Chloromethyl methyl ether	Chloromethyl methyl ether
	Chlorophenol	Chlorophenol
	Chlorophenoxy herbidices	Chlorophenoxy herbidices
126-99-8	Chloroprene	Chloroprene
77-92-9	Citric acid	Citric acid
8007-45-2	Coal tar pitch volatiles - soluble fraction	Coal tar pitch volatiles - soluble fraction
120-71-8	Cresidine, p-	Cresidine, p-
108-39-4	Cresol, m-	Cresol, m-
95-48-7	Cresol, O-	Cresol, O-
106-44-5	Cresol, p-	Cresol, p-
98-82-8	Cumene	Cumene
80-15-9	Cumene hydroperoxide	Cumene hydroperoxide
CYCLO SOL	Cyclo sol 63	Cyclo sol 63
4680-78-8	C.I. Acid Green 3*	C.I. Acid Green 3*
569-64-2	C.I. Basic Green 4*	C.I. Basic Green 4*
989-38-8	C.I. Basic Red 1*	C.I. Basic Red 1*
16071-86-6	C.I. Brown 95*	C.I. Brown 95*
1937-37-7	C.I. Direct Black 38*	C.I. Direct Black 38*
2602-46-2	C.I. Direct Blue 6*	C.I. Direct Blue 6*
2832-40-8	C.I. Disperse Yellow 3*	C.I. Disperse Yellow 3*
81-88-9	C.I. Food Red 15*	C.I. Food Red 15*
3761-53-3	C.I. Food Red 5*	C.I. Food Red 5*
3118-97-6	C.I. Solvent Orange 7*	C.I. Solvent Orange 7*
842-07-9	C.I. Solvent Yellow 14*	C.I. Solvent Yellow 14*
97-56-3	C.I. Solvent Yellow 3*	C.I. Solvent Yellow 3*
128-66-5	C.I. Vat Yellow 4*	C.I. Vat Yellow 4*
127-20-8	Dalapon sodium salt	Dalapon sodium salt
50-29-3	DDT	DDT
17702-41-9	Decaborane	Decaborane
1163-19-5	Decabromodiphenyl oxide	Decabromodiphenyl oxide
124-18-5	Decane, n-	Decane, n-
872-05-9	Decene, 1-	Decene, 1-
123-42-2	Diacetone alcohol	Diacetone alcohol
615-05-4	Diaminoanisole, 2,4-	Diaminoanisole, 2,4-
39156-41-7	Diaminoanisole sulphate, 2,4-	Diaminoanisole sulphate, 2,4-
101-80-4	Diaminodiphenyl ether, 4,4'-	Diaminodiphenyl ether, 4,4'-

C A S #	SYNONYMS	CHEMICAL NAME
95-80-7	Diaminotoluene, 2,4-s	Diaminotoluene, 2,4-s
25376-45-8	Diaminotoluene (mixed isomers)	Diaminotoluene (mixed isomers)
333-41-5	Diazinon	Diazinon
334-88-3	Diazomethane	Diazomethane
132-64-9	Dibenzofuran	Dibenzofuran
192-65-0	Dibenzo[a,e]pyrene	Dibenzo[a,e]pyrene
189-64-0	Dibenzo[a,h]pyrene	Dibenzo[a,h]pyrene
189-55-9	Dibenzo[a,i]pyrene	Dibenzo[a,i]pyrene
191-30-0	Dibenzo[a,l]pyrene	Dibenzo[a,l]pyrene
226-36-8	Dibenz[a,h]acridine	Dibenz[a,h]acridine
53-70-3	Dibenz[a,h]anthracene	Dibenz[a,h]anthracene
224-42-0	Dibenz[a,jh]acridine	Dibenz[a,jh]acridine
19287-45-7	Diborane	Diborane
84-74-2	Dibutyl phthalate	Dibutyl phthalate
131-15-7	Dicapryl phthalate	Dicapryl phthalate
541-73-1	Dichlorobenzene, 1,3-	Dichlorobenzene, 1,3-
106-46-7	Dichlorobenzene, 1,4-	Dichlorobenzene, 1,4-
25321-22-6	Dichlorobenzene (mixed isomers)	Dichlorobenzene (mixed isomers)
75-27-4	Dichlorobromomethane	Dichlorobromomethane
540-59-0	Dichloroethylene, 1,,2-	Dichloroethylene, 1,,2-
542-75-6	Dichloropropylene	Dichloropropylene
120-83-2	Dichlorphenol, 2,4-	Dichlorphenol, 2,4-
1464-53-5	Diepoxybutane	Diepoxybutane
111-42-2	Diethanolamine	Diethanolamine
64-67-5	Diethyl sulphate	Diethyl sulphate
109-89-7	Diethylamine	Diethylamine
112-34-5	Diethylene glycol monobutyl ether	Diethylene glycol monobutyl ether
124-17-4	Diethylene glycol monobutyl ether acetate	Diethylene glycol monobutyl ether acetate
111-90-0	Diethylene glycol monoethyl ether	Diethylene glycol monoethyl ether
112-12-5	Diethylene glycol monoethyl ether acetate	Diethylene glycol monoethyl ether acetate
108-83-8	Diisobutyl ketone	Diisobutyl ketone
119-90-4	Dimethoxybenzidine, 3,3`-	Dimethoxybenzidine, 3,3`-
124-40-3	Dimethyl amine	Dimethyl amine
115-10-6	Dimethyl ether	Dimethyl ether
57-14-7	Dimethyl hydrazine, 1,1-	Dimethyl hydrazine, 1,1-

CAS #	SYNONYMS	CHEMICAL NAME
756-79-6	Dimethyl methylphosphonate	Dimethyl methylphosphonate
105-67-9	Dimethyl phenol, 2,4-	Dimethyl phenol, 2,4-
77-78-1	Dimethyl sulphate	Dimethyl sulphate
75-18-3	Dimethyl sulphide	Dimethyl sulphide
	Dimethylacetamide, n,n-	Dimethylacetamide, n,n-
60-11-7	Dimethylaminoazobenzene, 4-	Dimethylaminoazobenzene, 4-
108-69-0	Dimethylaniline, 3,5-	Dimethylaniline, 3,5-
121-69-7	Dimethylaniline, n,n-	Dimethylaniline, n,n-
79-44-7	Dimethylcarbamyl chloride	Dimethylcarbamyl chloride
109-55-7	Dimethyl-1,3-diamino propane, n,n-	Dimethyl-1,3-diamino propane, n,n-
51-28-5	Dinitrophenol, 2,4-	Dinitrophenol, 2,4-
121-14-2	Dinitrotoluene, 2,4-	Dinitrotoluene, 2,4-
606-20-2	Dinitrotoluene, 2,6-	Dinitrotoluene, 2,6-
534-52-1	Dinitro-o-cresol, 4,6-	Dinitro-o-cresol, 4,6-
117-84-0	Dioctyl phthalate, n-	Dioctyl phthalate, n-
646-06-0	Dioxolane	Dioxolane
122-39-4	Diphenylamine	Diphenylamine
85-00-7	Diquat dibromide -	Diquat dibromide -
85-00-7	Diquat dibromide - respirable	Diquat dibromide - respirable
1886-81-3	Dodecyl benzene sulphonic acid	Dodecyl benzene sulphonic acid
24391-00-3	Dodine	Dodine
548-73-2	Droperidol	Droperidol
106-89-8	Epichlorohydrin	Epichlorohydrin
110-80-5	Ethoxyethanol, 2-	Ethoxyethanol, 2-
141-78-6	Ethyl acetate	Ethyl acetate
541-41-3	Ethyl chloroformate	Ethyl chloroformate
60-29-7	Ethyl ether	Ethyl ether
104-76-7	Ethyl hexanol, 2-	Ethyl hexanol, 2-
84-51-5	Ethylanthraquinone, 2-	Ethylanthraquinone, 2-
10-76-2	Ethylene dichloride	Ethylene dichloride
628-96-6	Ethylene glycol dinitrate	Ethylene glycol dinitrate
112-25-4	Ethylene glycol monohexyl ether	Ethylene glycol monohexyl ether
96-45-7	Ethylene thiourea	Ethylene thiourea
60-00-4	Ethylenediaminetetraacetic acid	Ethylenediaminetetraacetic acid
763-69-9	Ethyl-3-ethoxy propionate	Ethyl-3-ethoxy propionate
990-73-8	Fentanyl citrate	Fentanyl citrate

CAS #	SYNONYMS	CHEMICAL NAME
1309-37-1	Ferric oxide	Ferric oxide
	Fluorinert 3M-FC-70	Fluorinert 3M-FC-70
64-18-6	Formic acid	Formic acid
98-01-1	Furfural	Furfural
98-00-0	Furfuryl alcohol	Furfuryl alcohol
8006-61-9	Gasoline	Gasoline
111-30-8	Glutaraldehyde	Glutaraldehyde
52-86-8	Haloperidol	Haloperidol
38998-75-3	Heptachloro dibenzofurans H7CDFs	Heptachloro dibenzofurans H7CDFs
	1,2,3,4,6,7,8 Heptachloro dibenzofuran	1,2,3,4,6,7,8 Heptachloro dibenzofuran
	1,2,3,4,7,8,9 Heptachloro dibenzofuran	1,2,3,4,7,8,9 Heptachloro dibenzofuran
37871-00-4	Heptachloro dibenzo-p-dioxins H7CDDs	Heptachloro dibenzo-p-dioxins H7CDDs
	1,2,3,4,6,7,8 Heptachloro dibenzo-p-dioxin	1,2,3,4,6,7,8 heptachloro dibenzo-p-dioxin
118-74-1	Hexachlorobenzene	Hexachlorobenzene
55684-94-1	Hexachloro dibenzofurans H6CDFs	Hexachloro dibenzofurans H6CDFs
	1,2,3,4,7,8 Hexachloro dibenzofuran	1,2,3,4,7,8 Hexachloro dibenzofuran
	1,2,3,6,7,8 Hexachloro dibenzofuran	1,2,3,6,7,8 Hexachloro dibenzofuran
	1,2,3,7,8,9 Hexachloro dibenzofuran	1,2,3,7,8,9 Hexachloro dibenzofuran
	2,3,4,6,7,8 Hexachloro dibenzofuran	2,3,4,6,7,8 Hexachloro dibenzofuran
34465-46-8	Hexachloro dibenzo-p-dioxins H6CDDs	Hexachloro dibenzo-p-dioxins H6CDDs
	1,2,3,4,7,8 Hexachloro dibenzo-p-dioxin	1,2,3,4,7,8 Hexachloro dibenzo-p-dioxin
	1,2,3,6,7,8 Hexachloro dibenzo-p-dioxin	1,2,3,6,7,8 Hexachloro dibenzo-p-dioxin
	1,2,3,7,8,9 Hexachloro dibenzo-p-dioxin	1,2,3,7,8,9 Hexachloro dibenzo-p-dioxin
67-72-1	Hexachloroethane	Hexachloroethane
1335-87-1	Hexachloronaphthalene	Hexachloronaphthalene
87-68-3	Hexachloro-1,3-butadiene	Hexachloro-1,3-butadiene
999-97-3	Hexamethyl disilazane	Hexamethyl disilazane
822-06-0	Hexamethylene diisocyanate monomer	Hexamethylene diisocyanate monomer
4035-89-6	Hexamethylene diisocyanate trimer	Hexamethylene diisocyanate trimer
680-31-9	Hexamethylphosphoramide	Hexamethylphosphoramide
110-54-3	Hexane	Hexane
107-41-5	Hexylene glycol	Hexylene glycol
302-01-2	Hydrazine	Hydrazine
10034-93-2	Hydrazine sulphate	Hydrazine sulphate
10035-10-6	Hydrogen bromide	Hydrogen bromide
7664-39-3	Hydrogen fluoride	Hydrogen fluoride

CAS #	SYNONYMS	CHEMICAL NAME
7722-84-1	Hydrogen peroxide	Hydrogen peroxide
7783-06-4	Hydrogen sulphide	Hydrogen sulphide
123-31-9	Hydroquinone	Hydroquinone
193-39-5	Indeno[1,2,3,cd]pyrene	Indeno[1,2,3,cd]pyrene
15438-31-0	Iron - metallic	Iron - metallic
	Isoamyl acetate	Isoamyl acetate
78-83-1	Isobutanol	Isobutanol
110-19-0	Isobutyl acetate	Isobutyl acetate
97-85-8	Isobutyl isobutyrate	Isobutyl isobutyrate
78-84-2	Isobutyraldehyde	Isobutyraldehyde
108-21-4	Isopropyl acetate	Isopropyl acetate
80-05-7	Isopropylidenediphenol, 4,4'-	Isopropylidenediphenol, 4,4'-
	Lead in dustfall	Lead in dustfall
7580-67-8	Lithium hydrides	Lithium hydrides
1309-48-4	Magnesium oxide	Magnesium oxide
121-75-5	Malathion	Malathion
	Manganese tricarbonyl	Manganese tricarbonyl
108-78-1	Melamine	Melamine
74-93-1	Mercaptans (as Methyl mercaptan) - total	Mercaptans (as Methyl mercaptan) - total
120-78-5	Mercapto benzo thiazo disulphide	Mercapto benzo thiazo disulphide
	Mercury (as Hg) - alkyl compounds	Mercury (as Hg) - alkyl compounds
79-41-4	Methacrylic acid	Methacrylic acid
108-62-3	Methaldehyde	Methaldehyde
109-86-4	Methoxyethanol, 2-	Methoxyethanol, 2-
1338-23-4	Methyl ethyl ketone peroxide	Methyl ethyl ketone peroxide
60-34-4	Methyl hydrazine	Methyl hydrazine
74-88-4	Methyl iodide	Methyl iodide
624-83-9	Methyl isocyanate	Methyl isocyanate
2987-53-3	Methyl mercapto aniline	Methyl mercapto aniline
119-36-8	Methyl salicylate	Methyl salicylate
98-83-9	Methyl Styrene, alpha-	Methyl Styrene, alpha-
1634-04-4	Methyl tert-butyl ether	Methyl tert-butyl ether
109-87-5	Methylal	Methylal
3697-24-3	Methylchrysene, 5-	Methylchrysene, 5-
74-95-3	Methylene bromide	Methylene bromide
107-77-9	Methylene dianiline	Methylene dianiline

C A S #	SYNONYMS	CHEMICAL NAME
101-61-1	Methylenebis(n,n-dimethyl) benzenamine, 4,4'-	Methylenebis(n,n-dimethyl) benzenamine, 4,4'-
101-77-9	Methylenedianiline, 4,4'-	Methylenedianiline, 4,4'-
110-12-3	Methyl-2-hexanone, 5-	Methyl-2-hexanone, 5-
872-50-4	Methyl-2-pyrrolidone, n-	Methyl-2-pyrrolidone, n-
110-43-0	Methyl-n-amyl ketone	Methyl-n-amyl ketone
90-94-8	Michler's ketone	Michler's ketone
	Miconazole nitrate	Miconazole nitrate
MILK POWDER	Milk powder	Milk powder
	Mineral fibres	Mineral fibres
	Mineral spirit	Mineral spirit
7439-98-7	Molybdenum	Molybdenum
1313-27-5	Molybdenum trioxide	Molybdenum trioxide
74-89-5	Monomethyl amine	Monomethyl amine
90-15-3	Naphthol, alpha-	Naphthol, alpha-
134-32-7	Naphthylamine, alpha-	Naphthylamine, alpha-
91-59-8	Naphthylamine, beta-	Naphthylamine, beta-
13463-39-3	Nickel carbonyl	Nickel carbonyl
18662-53-8	Nitrilotriacetic acid	Nitrilotriacetic acid
98-95-3	Nitrobenzene	Nitrobenzene
92-93-3	Nitrobiphenol, 4-	Nitrobiphenol, 4-
10102-44-0	Nitrogen oxides (as Nitrogen dioxide)	Nitrogen oxides (as Nitrogen dioxide)
88-75-5	Nitrophenol, 2-	Nitrophenol, 2-
100-02-7	Nitrophenol, 4-	Nitrophenol, 4-
79-46-9	Nitropropane, 2-	Nitropropane, 2-
86-30-6	Nitrosodiphenolamine, n-	Nitrosodiphenolamine, n-
156-10-5	Nitrosodiphenolamine, p-	Nitrosodiphenolamine, p-
924-16-3	Nitrosodi-n-butylamine, n-	Nitrosodi-n-butylamine, n-
4549-40-0	Nitrosomethylvinylamine, N	Nitrosomethylvinylamine, N
59-89-2	Nitrosomorpholine, n-	Nitrosomorpholine, n-
16543-55-8	Nitrosonornicotine, N-	Nitrosonornicotine, N-
100-75-4	Nitrosopiperidine, n-	Nitrosopiperidine, n-
759-73-9	Nitroso-n-ethylurea, n-	Nitroso-n-ethylurea, n-
621-64-7	Nitroso-n-propylamine, n-	Nitroso-n-propylamine, n-
99-59-2	Nitro-o-anisidine	Nitro-o-anisidine
39001-02-0	Octachloro dibenzofurans	Octachloro dibenzofurans
3268-87-9	Octachloro dibenzo-p-dioxins OCDDs	Octachloro dibenzo-p-dioxins OCDDs

CAS #	SYNONYMS	CHEMICAL NAME
2234-13-1	Octachloronaphthalene	Octachloronaphthalene
25377-83-7	Octene, 1-	Octene, 1-
112-80-1	Oleic acid	Oleic acid
20816-12-0	Osmium tetroxide	Osmium tetroxide
144-62-7	Oxalic acid	Oxalic acid
10028-15-6	Ozone	Ozone
7657-10-1	Palladium - water soluble compounds	Palladium - water soluble compounds
1910-42-5	Paraquat dichloride - respirable	Paraquat dichloride - respirable
1910-42-5	Paraquat dichloride - total in ambient air	Paraquat dichloride - total in ambient air
	Particulate (inhalable)	Particulate (inhalable)
1406-05-9	Penicillin	Penicillin
19624-22-7	Pentaborane	Pentaborane
608-93-5	Pentachlorobenzene	Pentachlorobenzene
30402-15-4	Pentachloro dibenzofurans P5CDFs	Pentachloro dibenzofurans P5CDFs
	1,2,3,7,8 Pentachloro dibenzofuran	1,2,3,7,8 Pentachloro dibenzofuran
	2,3,4,7,8 Pentachloro dibenzofuran	2,3,4,7,8 Pentachloro dibenzofuran
36088-22-9	Pentachloro dibenzo-p-dioxins P5CDDs	Pentachloro dibenzo-p-dioxins P5CDDs
	1,2,3,7,8 Pentachloro dibenzo-p-dioxin	1,2,3,7,8 Pentachloro dibenzo-p-dioxin
79-21-0	Peracetic acid	Peracetic acid
106-50-3	Phenylenediamine, p-	Phenylenediamine, p-
90-43-7	Phenylphenol, 2-	Phenylphenol, 2-
7803-51-2	Phosphine	Phosphine
10025-87-3	Phosphorus oxychloride	Phosphorus oxychloride
10026-13-8	Phosphorus pentachloride	Phosphorus pentachloride
7723-14-0	Phosphorus (yellow or white)	Phosphorus (yellow or white)
88-89-1	Picric acid	Picric acid
2062-78-4	Pimozide	Pimozide
7440-06-4	Platinum - water soluble compounds	Platinum - water soluble compounds
	Polybutene-1-sulphone	Polybutene-1-sulphone
25267-15-6	Polychloroprene	Polychloroprene
151-50-8	Potassium cyanide	Potassium cyanide
1310-58-3	Potassium hydroxide	Potassium hydroxide
7757-79-1	Potassium nitrate	Potassium nitrate
1120-71-4	Propane sultone	Propane sultone
57-57-8	Propiolacetone, beta-	Propiolacetone, beta-
79-09-4	Propionic acid	Propionic acid

C A S #	SYNONYMS	CHEMICAL NAME
123-62-6	Propionic anhydride (as Propionic acid)	Propionic anhydride (as Propionic acid)
57-55-6	Propylene glycol	Propylene glycol
107-98-2	Propylene glycol methyl ether	Propylene glycol methyl ether
108-65-6	Propylene glycol monomethyl ether acetate	Propylene glycol monomethyl ether acetate
75-55-8	Propyleneimine	Propyleneimine
91-22-5	Quinoline	Quinoline
106-51-4	Quinone	Quinone
	Radionuclides (Radon)	Radionuclides (Radon)
94-59-7	Safrole	Safrole
7803-62-5	Silane	Silane
	Silica - respirable, under 10 um aerodynamic diameter	Silica - respirable, under 10 um aerodynamic diameter
7631-90-5	Sodium bisulphite	Sodium bisulphite
7775-09-9	Sodium chlorate	Sodium chlorate
7758-19-2	Sodium chlorite	Sodium chlorite
143-33-9	Sodium cyanide	Sodium cyanide
7757-82-6	Sodium sulphate (solution)	Sodium sulphate (solution)
	Stannous chloride (as Sn)	Stannous chloride (as Sn)
7440-24-6	Strontium	Strontium
1633-05-2	Strontium carbonate	Strontium carbonate
18480-07-4	Strontium hydroxide	Strontium hydroxide
1314-11-0	Strontium oxide	Strontium oxide
96-09-3	Styrene oxide	Styrene oxide
	Sulphamic acid	Sulphamic acid
	Sulphur compounds, reduced	Sulphur compounds, reduced
7446-09-5	Sulphur dioxide	Sulphur dioxide
2551-62-4	Sulphur hexafluoride	Sulphur hexafluoride
TSP	Suspended particulate matter - under 44 um aero. diam.	Suspended particulate matter - under 44 um aero. diam.
14807-96-6	Talc - fibrous	Talc - fibrous
13494-80-9	Tellurium - excluding hydrogen telluride	Tellurium - excluding hydrogen telluride
100-21-0	Terephthalic acid	Terephthalic acid
	Tetrabutylurea	Tetrabutylurea
	Tetrachlorobenzenes	Tetrachlorobenzenes
	Tetrachloro dibenzofurans T4CDFs	Tetrachloro dibenzofurans T4CDFs
51207-31-9	2,3,7,8 Tetrachloro dibenzofuran	2,3,7,8 Tetrachloro dibenzofuran
41903-57-5	Tetrachloro dibenzo-p-dioxins T4CDDs	Tetrachloro dibenzo-p-dioxins T4CDDs
1746-01-6	2,3,7,8 Tetrachloro dibenzo-p-dioxin	2,3,7,8 Tetrachloro dibenzo-p-dioxin

C A S #	SYNONYMS	CHEMICAL NAME
79-34-5	Tetrachloroethane, 1,1,2,2-	Tetrachloroethane, 1,1,2,2-
58-90-2	Tetrachlorophenol, 2,3,4,6-	Tetrachlorophenol, 2,3,4,6-
109-99-9	Tetrahydrofuran	Tetrahydrofuran
	Tetramethyl thiuram disulphide	Tetramethyl thiuram disulphide
7440-28-0	Thallium	Thallium
62-55-5	Thioacetamide	Thioacetamide
139-65-1	Thiodianiline, 4,4'-	Thiodianiline, 4,4'-
1314-20-1	Thorium dioxide	Thorium dioxide
7440-31-5	Tin	Tin
7440-32-6	Titanium	Titanium
7550-45-0	Titanium tetrachloride	Titanium tetrachloride
	Tolmetin sodium	Tolmetin sodium
91-08-7	Toluene-2,6-diisocyanate	Toluene-2,6-diisocyanate
95-53-4	Toluidine, o-	Toluidine, o-
636-21-5	Toluidine hydrochloride, o-	Toluidine hydrochloride, o-
TRS	Total reduced sulphur (as Hydrogen sulphide)	Total reduced sulphur (as Hydrogen sulphide)
8001-35-2	Toxaphene	Toxaphene
79-00-5	Trichloroethane, 1,1,2-	Trichloroethane, 1,1,2-
75-69-4	Trichlorofluoromethane	Trichlorofluoromethane
95-95-4	Trichlorophenol, 2,4,5-	Trichlorophenol, 2,4,5-
88-06-2	Trichlorophenol, 2,4,6-	Trichlorophenol, 2,4,6-
75-50-3	Trimethyl amine	Trimethyl amine
95-63-6	Trimethylbenzene, 1,2,4-	Trimethylbenzene, 1,2,4-
77-99-6	Trimethylol propane	Trimethylol propane
	Tripropyltin methacrylate	Tripropyltin methacrylate
126-72-7	Tris (2,3-dibromopropyl) phosphate	Tris (2,3-dibromopropyl) phosphate
108-05-4	Vinyl acetate	Vinyl acetate
593-60-2	Vinyl bromide	Vinyl bromide
81-81-2	Warfarin	Warfarin
WHEY POWDER	Whey powder	Whey powder
108-38-3	Xylene, m-	Xylene, m-
95-47-6	Xylene, o-	Xylene, o-
106-42-3	Xylene, p-	Xylene, p-
87-62-7	Xylidine,2,6-	Xylidine,2,6-
7646-85-7	Zinc chloride	Zinc chloride

CAS #	SYNONYMS	CHEMICAL NAME
630-08-0	Carbon monoxide	Carbon monoxide
PCDD	Chlorinated dibenzo-p-dioxins (CDDs)	Chlorinated dibenzo-p-dioxins (CDDs)
506-77-4	Cyanogen chloride	Cyanogen chloride
77-58-7	Dibutyltin dilaurate	Dibutyltin dilaurate
	Lithium - other than hydrides	Lithium - other than hydrides
62-75-9	Nitrosodimethylamine, n-	Nitrosodimethylamine, n-
10024-97-2	Nitrous oxide	Nitrous oxide
111-65-9	Octane	Octane
71-55-6	1,1,1-Trichlorethane	Trichloroethane, 1,1,1-
72-43-5	1,1,1-Trichloro-2,2-bis(4-methoxyphenyl) ethane	Methoxychlor
72-43-5	1,1,1-Trichloro-2,2-bis(p-methoxyphenyl) ethane	Methoxychlor
72-43-5	1,1,1-Trichloro-2,2-di(4-methoxyphenyl)ethane	Methoxychlor
127-18-4	1,1,2,2-tetrachloroethene	Perchloroethylene
127-18-4	1,1,2,2-tetrachloroethylene	Perchloroethylene
79-01-6	1,1,2-Trichloroethylene	Trichloroethylene
76-13-1	1,1,2-Trichlorotrifluoroethane	Trifluorotrichloroethane
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	Trifluorotrichloroethane
76-13-1	1,1,2-Trifluorotrichloroethane	Trifluorotrichloroethane
76-13-1	1,1,2-Trifluoro-1,2,2-trichloroethane	Trifluorotrichloroethane
92-52-4	1,1'-Biphenyl (9CI)	Biphenyl
72-43-5	1,1-Bis(p-methoxyphenyl)-2,2,2-trichloroethane	Methoxychlor
75-35-4	1,1-Dichloroethene	Vinylidene chloride (1,1-Dichloroethene)
75-35-4	1,1-Dichloroethylene	Vinylidene chloride (1,1-Dichloroethene)
75-65-0	1,1-Dimethylethanol	Butyl alcohol, tertiary-
1336-36-3	1,1'-Biphenyl, chloro derivs	Polychlorinated biphenyls (PCBs)
101-68-8	1,1'-Methylenebis[4-isocyanatobenzene]	Methane diphenyl diisocyanate
76-13-1	1,2,2-Trichlorotrifluoroethane	Trifluorotrichloroethane
77-47-4	1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	Hexachlorocyclopentadiene
55-63-0	1,2,3-Propanetriol, trinitrate (9CI)	Nitroglycerin
55-63-0	1,2,3-Propanetriyl nitrate	Nitroglycerin
57-74-9	1,2,4,5,6,7,8-8-octachloro-2,3,3a,4,7,7a-hexahydro-(CI)	Chlordane
120-82-1	1,2,4-Trichlorobenzol	Trichlorobenzene, 1,2,4-
120-82-1	1,2,5-Trichlorobenzene	Trichlorobenzene, 1,2,4-
117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester (9CI)	Dioctyl phthalate
84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester (9CI)	Diethyl phthalate
131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester (9CI)	Dimethyl phthalate

CAS #	SYNONYMS	CHEMICAL NAME
85-44-9	1,2-Benzenedicarboxylic anhydride	Phthalic anhydride
81-07-2	1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide	Saccharin
95-50-1	1,2-Dichlorobenzene	Dichlorobenzene, ortho-
78-87-5	1,2-Dichloropropane	Propylene dichloride
107-21-1	1,2-Dihydroxyethane	Ethylene glycol
75-21-8	1,2-Epoxyethane	Ethylene oxide
75-56-9	1,2-Epoxypropane	Propylene oxide
107-21-1	1,2-Ethanediol (9CI)	Ethylene glycol
120-82-1	1,3,4-Trichlorobenzene	Trichlorobenzene, 1,2,4-
1897-45-6	1,3-Benzenedicarbonitrile, 2,4,5,6-tetrachloro-	Chlorothalonil
77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-(8Cl, 9CI)	Hexachlorocyclopentadiene
85-44-9	1,3-Isobenzofurandione (9CI)	Phthalic anhydride
85-44-9	1,3-Phthalandione	Phthalic anhydride
76-44-8	1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1	Heptachlor
123-91-1	1,4-Diethylene dioxide	Dioxane, 1,4-
123-91-1	1,4-Dioxan	Dioxane, 1,4-
123-91-1	1,4-Dioxycyclohexane	Dioxane, 1,4-
123-91-1	1,4-Dioxin, tetrahydro-	Dioxane, 1,4-
309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4	Aldrin
1344-28-1	1001M	Aluminum oxide
57-74-9	1068	Chlordane
1344-28-1	1100H24	Aluminum oxide
7440-50-8	1721 Gold	Copper
133-06-2	1H-Isoindole-1,3(2H)-dione	Captan
71-36-3	1-Butanol (9CI)	Butanol, n-
71-36-3	1-Butyl alcohol	Butanol, n-
87-86-5	1-Hydroxypentachlorobenzene	Pentachlorophenol
63-25-2	1-Naphthalenol methylcarbamate	Carbaryl
123-38-6	1-Propanal	Propionaldehyde
123-38-6	1-Propanone	Propionaldehyde
72-43-5	2,2,2-Trichloro-1,1-bis(4-methoxyphenyl) ethane	Methoxychlor
72-43-5	2,2-Bis(p-methoxyphenyl)-1,1,1-trichloroethane	Methoxychlor
584-84-9	2,4-Diisocyanatotoluene	Toluene-2,4-diisocyanate
584-84-9	2,4-Diisocyanato-1-methylbenzene	Toluene-2,4-diisocyanate
584-84-9	2,4-TDI	Toluene-2,4-diisocyanate
584-84-9	2,4-Toluene diisocyanate	Toluene-2,4-diisocyanate

CAS #	SYNONYMS	CHEMICAL NAME
584-84-9	2,4-Tolylene diisocyanate	Toluene-2,4-diisocyanate
68-76-8	2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris(1-aziridinyl)-	Triaziquone
133-90-4	2,5-Dichloro-3-aminobenzoic acid	Chloramben
108-31-6	2,5-Furandione (9CI)	Maleic anhydride
78-93-3	2-Butanone (8CI, 9CI)	Methyl ethyl ketone
51-75-2	2-Chloro-n-(2-chloroethyl)-n-methylethanamine	Nitrogen mustard
110-80-5	2-Ethoxyethanol	Ethylene glycol ethyl ether
110-80-5	2-Ethoxyethyl alcohol	Ethylene glycol ethyl ether
117-81-7	2-Ethylhexyl phthalate	Dioctyl phthalate
107-21-1	2-Hydroxyethanol	Ethylene glycol
67-63-0	2-Hydroxypropane	Isopropyl alcohol
108-10-1	2-Methylpropyl methyl ketone	Methyl isobutyl ketone
75-65-0	2-Methyl-2-propanol	Butyl alcohol, tertiary-
108-10-1	2-Methyl-4-pentanone	Methyl isobutyl ketone
108-10-1	2-Pentanone, 4-methyl- (7CI, 8CI, 9CI)	Methyl isobutyl ketone
98-82-8	2-Phenylpropane	Isopropyl benzene
96-33-3	2-Propanoaic acid, methyl ester	Methyl acrylate
96-33-3	2-Propanoaic acid, methyl ester (9CI)	Methyl acrylate
75-65-0	2-Propanol, 2-methyl- (9CI)	Butyl alcohol, tertiary-
67-63-0	2-Propanol (9CI)	Isopropyl alcohol
67-64-1	2-Propanone (9CI)	Acetone
107-02-8	2-Propenal (9CI)	Acrolein
79-06-1	2-Propenamide (9CI)	Acrylamide
107-13-1	2-Propenenitrile (9CI)	Acrylonitrile
80-62-6	2-Propenoic acid, 2-methyl-, methyl ester (9CI)	Methyl methacrylate
141-32-2	2-Propenoic acid, butyl ester (9CI)	Butyl acrylate
140-88-5	2-Propenoic acid, ethyl ester	Ethyl acrylate
140-88-5	2-Propenoic acid, ethyl ester (9CI)	Ethyl acrylate
141-32-2	2-Propenoic acid butyl ester	Butyl acrylate
107-02-8	2-Propen-1-one	Acrolein
67-63-0	2-Propyl alcohol	Isopropyl alcohol
91-94-1	3,3'-dichlorobiphenyl-4,4'-diamine	Dichlorobenzidine, 3,3-
91-94-1	3,3'-Dichloro-4,4'-diaminobiphenyl	Dichlorobenzidine, 3,3-
133-06-2	3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-(9CI)	Captan
133-90-4	3-Amino-2,5-dichlorobenzoic acid	Chloramben
78-93-3	3-Butanone	Methyi ethyl ketone

CAS #	SYNONYMS	CHEMICAL NAME
101-68-8	4,4-Methylenebis(isocyanatobenzene)	Methane diphenyl diisocyanate
101-68-8	4,4-Methylenebis(phenyl isocyanate)	Methane diphenyl diisocyanate
101-68-8	4,4'Diphenylmethane isocyanate	Methane diphenyl diisocyanate
91-94-1	4,4'-Diamino-3,3'-dichlorobiphenyl	Dichlorobenzidine, 3,3-
91-94-1	4,4'-Diamino-3,3'-dichlorodiphenyl	Dichlorobenzidine, 3,3-
101-68-8	4,4'-Diisocyanatodiphenylmethane	Methane diphenyl diisocyanate
101-68-8	4,4'-Diphenylmethane diisocyanate	Methane diphenyl diisocyanate
101-68-8	4,4'-Methylenediphenyl diisocyanate	Methane diphenyl diisocyanate
101-68-8	4,4'-Methylenediphenylene isocyanate	Methane diphenyl diisocyanate
101-68-8	4,4'-Methylened1-p-phenylene diisocyanate	Methane diphenyl diisocyanate
72-43-5	4,4'-(2,2,2-Trichloroethylidene)dianisole	Methoxychlor
1332-21-4	4T04	Asbestos
133-06-2	4-Cyclohexene-1,2-dicarboximide-N-[(trichloromethyl)thio]-(8	Captan
108-10-1	4-Methyl-2-oxopentane	Methyl isobutyl ketone
108-10-1	4-Methyl-2-pentanone	Methyl isobutyl ketone
584-84-9	4-Methyl-m-phenylene diisocyanate	Toluene-2,4-diisocyanate
584-84-9	4-Methyl-m-phenylene isocyanate	Toluene-2,4-diisocyanate
1344-28-1	5N	Aluminum oxide
58-89-9	666	Lindane
1332-21-4	7N05	Asbestos
1332-21-4	7RF10	Asbestos
1344-28-1	A 00	Aluminum oxide
1344-28-1	A 97	Aluminum oxide
1344-28-1	A 99	Aluminum oxide
1344-28-1	A 99 (metal)	Aluminum oxide
1344-28-1	A 999	Aluminum oxide
1344-28-1	A 99N	Aluminum oxide
1344-28-1	AA 1099	Aluminum oxide
1344-28-1	AA 1193	Aluminum oxide
1344-28-1	AA 1199	Aluminum oxide
1344-28-1	AA 15	Aluminum oxide
133-06-2	Aacaptan	Captan
58-89-9	Aalindan	Lindane
1344-28-1	AC 1000	Aluminum oxide
1344-28-1	AC 1003	Aluminum oxide

C A S #	SYNONYMS	CHEMICAL NAME
74-85-1	Acetene	Ethylene
94-75-7	Acetic acid, (2,4-dichlorophenoxy)	D, 2,4-
75-07-0	Acetic aldehyde	Acetaldehyde
107-02-8	Acryaldehyde	Acrolein
141-32-2	Acryl acid butyl ester (6CI, 8CI)	Butyl acrylate
140-88-5	Acrylic acid ethyl ester (6CI, /8/ci0	Ethyl acrylate
96-33-3	Acrylic acid methyl ester (6CI, 8CI)	Methyl acrylate
107-02-8	Acrylic aldehyde	Acrolein
79-06-1	Acrylic amide	Acrylamide
107-13-1	Acrylon	Acrylonitrile
75-56-9	AD 6	Propylene oxide
75-56-9	AD 6 (suspending agent)	Propylene oxide
1344-28-1	AE	Aluminum oxide
75-09-2	Aerothene MM	Methylene chloride
71-55-6	Aerothene TT	Trichloroethane, 1,1,1-
1310-73-2	Aetznatron	Sodium hydroxide
58-89-9	Aficide	Lindane
58-89-9	Agrocide	Lindane
58-89-9	Agrocide III	Lindane
58-89-9	Agrocide WP	Lindane
91-20-3	Albocarbon	Naphthalene
10049-04-4	Alcide Anthium Dioxcide	Chlorine dioxide
67-63-0	Alcojel	Isopropyl alcohol
67-63-0	Alcosolve 2	Isopropyl alcohol
7440-22-4	Algaedyn	Silver
79-01-6	Algylen	Trichloroethylene
7440-50-8	Allbri Natural Copper	Copper
1344-28-1	Alloy 1199	Aluminum oxide
107-02-8	Allyl aldehyde	Acrolein
1344-28-1	Alpaste	Aluminum oxide
1344-28-1	Alpaste 0230T	Aluminum oxide
1344-28-1	Alpaste 0241M	Aluminum oxide
1344-28-1	Alpaste 100MS	Aluminum oxide
1344-28-1	Alpaste 240T	Aluminum oxide
1344-28-1	Alpaste 51-231	Aluminum oxide
1344-28-1	Alpaste 53-119	Aluminum oxide

C A S #	SYNONYMS	CHEMICAL NAME
1344-28-1	Aluminium flake	Aluminum oxide
1344-28-1	Aluminum A 00	Aluminum oxide
1344-28-1	Aluminum Dehydrated	Aluminum oxide
1344-28-1	Aluminum element	Aluminum oxide
1344-28-1	Aluminum powder	Aluminum oxide
1344-28-1	Aluminum-27	Aluminum oxide
133-90-4	Ambiben	Chloramben
58-89-9	Ameisenmittel merck	Lindane
58-89-9	Ameisentod	Lindane
133-06-2	Amercide	Captan
133-90-4	Amiben	Chloramben
133-90-4	Amibin	Chloramben
7664-41-7	Ammonia gas	Ammonia
7664-41-7	Ammonium amide (7CI)	Ammonia
133-90-4	Amoben	Chloramben
7440-50-8	Anac 110	Copper
79-01-6	Anamenth	Trichloroethylene
55-63-0	Angibid	Nitroglycerin
55-63-0	Anginine	Nitroglycerin
55-63-0	Angiolingual	Nitroglycerin
55-63-0	Angorin	Nitroglycerin
7647-01-0	Anhydrous hydrochloric acid	Hydrogen chloride
7664-39-3	Anhydrous hydrofluoric acid	Fluorides (as HF) - total, during non-growing season
127-18-4	Ankilostin	Perchloroethylene
84-66-2	Anozol	Diethyl phthalate
7440-36-0	Antimony Black	Antimony and compounds
7440-36-0	Antimony element	Antimony and compounds
127-18-4	Antisal 1	Perchloroethylene
108-88-3	Antisal 1a	Toluene
7664-39-3	Antisal 2b	Fluorides (as HF)
58-89-9	Aparasin	Lindane
58-89-9	Aphtiria	Lindane
58-89-9	Aplidal	Lindane
7697-37-2	Aqua fortis	Nitric acid
107-02-8	Aqualin	Acrolein
1344-28-1	AR 2	Aluminum oxide

CAS #	SYNONYMS	CHEMICAL NAME
85-44-9	Araldite HT 901	Phthalic anhydride
58-89-9	Arbitex	Lindane
76-13-1	Arcton 63	Trifluorotrichloroethane
7440-22-4	Argentum	Silver
76-13-1	Arklone P	Trifluorotrichloroethane
7440-38-2	Arsenic Black	Arsenic and compounds
7440-38-2	Arsenic element	Arsenic and compounds
7440-38-2	Arsenic-75	Arsenic and compounds
74-87-3	Artic	Methyl chloride
7440-50-8	Arwood copper	Copper
1319-77-3	ar-Toluenol	Cresols
76-13-1	Asahifron 113	Trifluorotrichloroethane
7440-66-6	Asarco L15	Zinc
1332-21-4	Asbestos, fibres	Asbestos
1332-21-4	Asbestos synthetic fibres	Asbestos
1310-73-2	Ascarite	Sodium hydroxide
1332-21-4	AT 7-1	Asbestos
492-80-8	Auramine	C.I. Solvent Yellow 34*
1344-28-1	AV00	Aluminum oxide
67-63-0	Avantin	Isopropyl alcohol
67-63-0	Avantine	Isopropyl alcohol
131-11-3	Avolin	Dimethyl phthalate
110-86-1	Azabenzene	Pyridene
110-86-1	Azine	Pyridene
151-56-4	Aziridine	Ethyleneimine
7697-37-2	Azotic acid	Nitric acid
1319-77-3	Bacillol	Cresols
133-06-2	Bangton	Captan
7440-39-3	Barium element	Barium-total water soluble
58-89-9	BBH	Lindane
58-89-9	Benhexol	Lindane
58-89-9	Bentox 10	Lindane
98-88-4	Benzaldehyde, .alpha.-chloro-	Benzoyl chloride
62-53-3	Benzenamine	Aniline
1582-09-8	Benzenamine, 2,6-dinitro-N-,N-dipropyl-'4-(trifluoromethyl)-	Trifluralin
101-68-8	Benzene, 1,1'-methylenebis[4-isocyanato-(9CI)]	Methane diphenyl diisocyanate

CAS #	SYNONYMS	CHEMICAL NAME
72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-(9CI)	Methoxychlor
120-82-1	Benzene, 1,2,4-trichloro (8CI, 9CI)	Trichlorobenzene, 1,2,4-
95-50-1	Benzene, 1,2-dichloro- (9CI)	Dichlorobenzene, ortho-
1836-75-5	Benzene, 2,4,-dichloro-1-(4-nitrophenoxy)	Nitrofen
584-84-9	Benzene, 2,4-diisocyanate	Toluene-2,4-diisocyanate
108-90-7	Benzene, chloro- (8CI, 9CI)	Monochlorobenzene
1330-20-7	Benzene, dimethyl- (9CI)	Xylenes
100-42-5	Benzene, ethenyl- (9CI)	Styrene
100-41-4	Benzene, ethyl- (7CI, 8CI, 9CI)	Ethyl benzene
110-82-7	Benzene, hexahydro-	Cyclohexane
108-88-3	Benzene, methyl- (9CI)	Toluene
95-50-1	Benzene, o-dichloro- (9CI)	Dichlorobenzene, ortho-
98-82-8	Benzene, (1-methylethyl)- (9CI)	Isopropyl benzene
510-15-6	Benzeneacetic acid, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha	Chlorobenzilate
135-20-6	Benzeneamine, N-hydroxy-N-nitroso ammonium salt	Cupferron
98-88-4	Benzenecarbonyl chloride	Benzoyl chloride
115-32-2	Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(	Dicofol
108-95-2	Benzenol	Phenol
91-94-1	Benzidine, 3,3-dichloro- (7CI, 8CI)	Dichlorobenzidine, 3,3-
56-23-5	Benzinoform	Carbon tetrachloride
133-90-4	Benzoic acid, 3-amino-2,5-dichloro- (8CI,9CI)	Chloramben
71-43-2	Benzol	Benzene
71-43-2	Benzole	Benzene
98-07-7	Benzotrichloride	Benzoic trichloride
50-32-8	Benzo(a)pyrene	Polycyclic aromatic hydrocarbons
58-89-9	Ben-hex	Lindane
7440-41-7	Beryllium element	Beryllium and compounds
7440-41-7	Beryllium-9	Beryllium and compounds
50-00-0	BFV	Formaldehyde
92-52-4	Bibenzene	Biphenyl
74-85-1	Bicarburretted hydrogen	Ethylene
1336-36-3	Biphenyl, chlorinated	Polychlorinated biphenyls (PCBs)
117-81-7	Bisoflex 81	Dioctyl phthalate
117-81-7	Bisoflex DOP	Dioctyl phthalate
101-68-8	Bis(1,4-isocyanatophenyl)methane	Methane diphenyl diisocyanate
117-81-7	Bis(2-ethylhexyl) 1,2-benzenedicarboxylate	Dioctyl phthalate

CAS #	SYNONYMS	CHEMICAL NAME
117-81-7	Bis(2-ethylhexyl) o-phthalate	Dioctyl phthalate
117-81-7	Bis(2-ethylhexyl) phthalate**	Dioctyl phthalate
101-68-8	Bis(4-isocyanatophenyl)methane	Methane diphenyl diisocyanate
101-68-8	Bis(p-isocyanatophenyl)methane	Methane diphenyl diisocyanate
55-63-0	Blasting oil	Nitroglycerin
7440-66-6	Blue powder	Zinc
108-31-6	BM 10	Maleic anhydride
7664-93-9	BOV	Sulphuric acid
74-83-9	Bromomethane**	Methyl bromide
71-36-3	Butanol	Butanol, n-
78-93-3	Butanone	Methyl ethyl ketone
141-32-2	Butyl 2-propenoate	Butyl acrylate
71-36-3	Butyl alcohol (8CI)	Butanol, n-
111-76-2	Butyl Cellosolve	Ethylene glycol butyl ether
1171-71-2	Butyl Cellosolve Acetate	Ethylene glycol butyl ether acetate
71-36-3	Butyl hydroxide	Butanol, n-
7440-50-8	C 10200	Copper
7440-50-8	C 11000	Copper
7440-50-8	C 1100P	Copper
7440-50-8	C 12200	Copper
77-47-4	C 56	Hexachlorocyclopentadiene
7440-50-8	CA 122	Copper
7440-43-9	Cadmium element	Cadmium and compounds
1332-21-4	Calidrea HPP	Asbestos
1332-21-4	Calidria R-G 244	Asbestos
133-06-2	Captaf	Captan
133-06-2	Captan 50W	Captan
107-13-1	Carbacryl	Acrylonitrile
12427-38-2	Carbamodithioic acid, 1,2-ethanediylbis-, manganese complex	Maneb
12122-67-7	Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex	Zineb
2303-16-4	Carbamothioic acid, bis(1-methylethyl)-S-(2,3-dichloro-2-pro	Diallate
67-56-1	Carbinol	Methanol
108-95-2	Carbolic acid	Phenol
75-15-0	Carbon bisulfide	Carbon disulphide
75-15-0	Carbon bisulphide	Carbon disulphide
56-23-5	Carbon chloride (CCL14)	Carbon tetrachloride

C A S #	SYNONYMS	CHEMICAL NAME
75-44-5	Carbon dichloride oxide	Phosgene
75-15-0	Carbon disulfide	Carbon disulphide
74-90-8	Carbon hydride nitride (CHN)	Hydrogen cyanide
75-44-5	Carbon oxychloride	Phosgene
75-15-0	Carbon sulfide (CS2)	Carbon disulphide
56-23-5	Carbona	Carbon tetrachloride
75-44-5	Carbonic dichloride (9CI)	Phosgene
75-44-5	Carbonyl chloride	Phosgene
75-44-5	Carbonyl dichloride	Phosgene
55-63-0	Cardamist	Nitroglycerin
1310-73-2	Caustic soda	Sodium hydroxide
71-36-3	CCS 203	Butanol, n-
57-74-9	CD 68	Chlordane
7440-50-8	CDA 101	Copper
7440-50-8	CDA 102	Copper
7440-50-8	CDA 110	Copper
7440-50-8	CDA 122	Copper
7440-50-8	CE 1110	Copper
7440-50-8	CE 115	Copper
58-89-9	Celanex	Lindane
110-80-5	Cellosolve	Ethylene glycol ethyl ether
111-15-9	Cellosolve Acetate	Ethylene glycol ethyl ether acetate
71-55-6	CF 2	Trichloroethane, 1,1,1-
75-44-5	CG	Phosgene
87-86-5	Chlon	Pentachlorophenol
58-89-9	Chloressene	Lindane
79-01-6	Chlorilen	Trichloroethylene
1336-36-3	Chlorinated biphenyl	Polychlorinated biphenyls (PCBs)
1336-36-3	Chlorinated diphenyl	Polychlorinated biphenyls (PCBs)
57-74-9	Chlorindan	Chlordane
7782-50-5	Chlorine molecule (CL2)	Chlorine
7782-50-5	Chlorine mol.	Chlorine
10049-04-4	Chlorine oxide (CL2) (8CI,9CI)	Chlorine dioxide
10049-04-4	Chlorine peroxide	Chlorine dioxide
10049-04-4	Chlorine(1V) oxide	Chlorine dioxide

CAS #	SYNONYMS	CHEMICAL NAME
108-90-7	Chlorobenzene**	Monochlorobenzene
1332-21-4	Chlorobestos 25	Asbestos
75-01-4	Chloroethene	Vinyl chloride
75-01-4	Chloroethylene	Vinyl chloride
75-44-5	Chloroformyl chloride	Phosgene
7647-01-0	Chlorohydric acid	Hydrogen chloride
74-87-3	Chloromethane**	Methyl chloride
10049-04-4	Chloroperoxyl	Chlorine dioxide
71-55-6	Chloroten (6CI)	Trichloroethane, 1,1,1-
71-55-6	Chlorotene	Trichloroethane, 1,1,1-
71-55-6	Chlorothene	Trichloroethane, 1,1,1-
71-55-6	Chlorothene NU	Trichloroethane, 1,1,1-
71-55-6	Chlorothene SM	Trichloroethane, 1,1,1-
71-55-6	Chlorothene VG	Trichloroethane, 1,1,1-
10049-04-4	Chloryl radical	Chlorine dioxide
79-01-6	Chlorylen	Trichloroethylene
7440-47-3	Chrome	Chromium - di-, tri- and hexavalent forms
7440-47-3	Chromium element	Chromium - di-, tri- and hexavalent forms
100-42-5	Cinnamene	Styrene
108-31-6	cis-Butenedioic anhydride	Maleic anhydride
95-50-1	Cloroben	Dichlorobenzene, ortho-
71-43-2	Coal naphtha	Benzene
7740-48-4	Cobalt element	Cobalt
7740-48-4	Cobalt-59	Cobalt
58-89-9	Codechine	Lindane
7439-96-5	Colloidal manganese	Manganese compounds (as Mn) - including permanganates
1310-73-2	Collo-Grillrein	Sodium hydroxide
1310-73-2	Collo-Tapetta	Sodium hydroxide
67-63-0	Combi-Schutz	Isopropyl alcohol
117-81-7	Compound 889	Dioctyl phthalate
7440-50-8	Copper element	Copper
7440-50-8	Copper M 1	Copper
7440-50-8	Copper Powder	Copper
57-74-9	Cortilan-neu	Chlordane
108-88-3	CP 25	Toluene
108-90-7	CP 27	Monochlorobenzene

C A S #	SYNONYMS	CHEMICAL NAME
110-86-1	CP 32	Pyridene
1319-77-3	Cresol (8CI)	Cresols
1319-77-3	Cresylic acid	Cresols
7440-50-8	Cu 102	Copper
7440-50-8	Cu M2	Copper
7440-50-8	CuEPP	Copper
7440-50-8	CuM3	Copper
98-82-8	Cumene	Isopropyl benzene
98-82-8	Cumol	Isopropyl benzene
74-83-9	Curafume	Methyl bromide
91-94-1	Curithane C 126	Dichlorobenzidine, 3,3-
7439-96-5	Cutaval	Manganese compounds (as Mn) - including permanganates
107-13-1	Cyanoethene	Acrylonitrile
107-13-1	Cyanoethylene	Acrylonitrile
58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-(1.alpha.,2.alpha.,3.bet	Lindane
58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro-.gamma.-(8CI)	Lindane
71-43-2	Cyclohexatriene	Benzene
91-94-1	C.I 23060	Dichlorobenzidine, 3,3-
1344-28-1	c.i. 77000	Aluminum oxide
7440-36-0	C.I. 77050	Antimony and compounds
7440-43-9	C.I. 77180	Cadmium and compounds
7740-48-4	C.I. 77320	Cobalt
7440-50-8	C.I. 77400	Copper
7439-92-1	C.I. 77575	Lead and compounds
7440-02-0	C.I. 77775	Nickel
7782-49-2	C.I. 77805	Selenium
7440-22-4	C.I. 77820	Silver
7440-50-8	C.I. Pigment Metal 2	Copper
7439-92-1	C.I. Pigment metal 4	Lead and compounds
76-13-1	Daiflon S 3	Trifluorotrichloroethane
96-12-8	DBCP	Dibromo-3-chloropropane, 1,2-
58-89-9	DBH	Lindane
7440-50-8	DCuP1	Copper
7664-38-2	Decon 4512	Phosphoric acid (as P2O5)
117-81-7	DEHP**	Dioctyl phthalate
58-89-9	Demtol-Extrakt	Lindane

CAS #	SYNONYMS	CHEMICAL NAME
55-18-5	DEN	Nitrosodiethylamine, n-
55-18-5	DEN (mutagen)	Nitrosodiethylamine, n-
55-18-5	DENA	Nitrosodiethylamine, n-
79-01-6	Densinfluat	Trichloroethylene
84-66-2	DEP	Diethyl phthalate
58-89-9	Devoran	Lindane
91-20-3	Dezodorator	Naphthalene
84-75-3	DHP	Dihexyl phthalate
7782-50-5	Diatomic chlorine	Chlorine
7782-50-5	Dichlorine	Chlorine
75-09-2	Dichloromethane**	Methylene chloride
127-18-4	Didakene	Perchloroethylene
84-66-2	Diethyl 1,2-benzenedicarboxylate	Diethyl phthalate
55-18-5	Diethylamine, n-nitroso- (6CI, 8CI)	Nitrosodiethylamine, n-
123-91-1	Diethylene dioxide	Dioxane, 1,4-
123-91-1	Diethylene ether	Dioxane, 1,4-
123-91-1	Diethylene oxide	Dioxane, 1,4-
55-18-5	Diethylnitrosamide	Nitrosodiethylamine, n-
55-18-5	Diethylnitrosamine	Nitrosodiethylamine, n-
55-18-5	Diethylnitrosoamine	Nitrosodiethylamine, n-
7664-93-9	Dihydrogen sulphate	Sulphuric acid
75-21-8	Dihydrooxirene	Ethylene oxide
108-31-6	Dihydro-2,5-dioxofuran	Maleic anhydride
1330-20-7	Dilan	Xylenes
95-50-1	Dilatin DB	Dichlorobenzene, ortho-
127-18-4	Dilatin PT	Perchloroethylene
7647-01-0	Dilute hydrochloric acid	Hydrogen chloride
72-43-5	Dimethoxy-DDT	Methoxychlor
72-43-5	Dimethoxy-DT	Methoxychlor
131-11-3	Dimethyl 1,2-benzenedicarbylate	Dimethyl phthalate
67-64-1	Dimethyl ketone	Acetone
131-11-3	Dimethyl o-phthalate	Dimethyl phthalate
1330-20-7	Dimethylbenzene	Xylenes
67-63-0	Dimethylcarbinol	Isopropyl alcohol
75-21-8	Dimethylene oxide	Ethylene oxide
67-64-1	Dimethylformaldehyde	Acetone

CAS #	SYNONYMS	CHEMICAL NAME
123-91-1	Dioxan	Dioxane, 1,4-
123-91-1	Dioxane	Dioxane, 1,4-
123-91-1	Dioxyethylene ether	Dioxane, 1,4-
1336-36-3	Diphenyl, chlorinated	Polychlorinated biphenyls (PCBs)
101-68-8	Diphenylmethane 4,4-'diisocyanate	Methane diphenyl diisocyanate
101-68-8	Diphenylmethane diisocyanate	Methane diphenyl diisocyanate
7664-93-9	Dipping acid	Sulphuric acid
75-15-0	Dithiocarbonic anhydride	Carbon disulphide
117-81-7	Di(2-ethylhexyl) phthalate	Dioctyl phthalate
101-68-8	Di(4-isocyanatophenyl)methane	Methane diphenyl diisocyanate
117-81-7	Di(ethylhexyl) phthalate**	Dioctyl phthalate
72-43-5	Di(p-methoxyphenyl)trichloromethyl methane	Methoxychlor
72-43-5	DMDT	Methoxychlor
131-11-3	DMF (insect repellent)	Dimethyl phthalate
131-11-3	DMP	Dimethyl phthalate
117-81-7	DOF	Dioctyl phthalate
117-81-7	DOF (Russian plasticizer)	Dioctyl phthalate
58-89-9	Dol granule	Lindane
117-81-7	DOP	Dioctyl phthalate
110-80-5	Dowanol EE	Ethylene glycol ethyl ether
57-74-9	Dowchlor	Chlordane
87-86-5	Dowicide 7	Pentachlorophenol
95-50-1	Dowtherm E	Dichlorobenzene, ortho-
107-21-1	Dowtherm SR 1	Ethylene glycol
10049-04-4	Doxcide 50	Chlorine dioxide
58-89-9	Drilltox-Spezial Aglukon	Lindane
87-86-5	Dura treat II	Pentachlorophenol
7440-50-8	E 115	Copper
7440-50-8	E 115 (metal)	Copper
7440-22-4	E 20	Silver
100-41-4	EB	Ethyl benzene
110-80-5	Ektasolve EE	Ethylene glycol ethyl ether
74-85-1	Elayl	Ethylene
74-83-9	Embafume	Methyl bromide
110-80-5	Emkanol	Ethylene glycol ethyl ether

CAS #	SYNONYMS	CHEMICAL NAME
108-95-2	ENT 1814	Phenol
58-89-9	ENT 7,796	Lindane
57-74-9	ENT 9932	Chlordane
58-89-9	Entomoxan	Lindane
87-86-5	EP 30	Pentachlorophenol
75-21-8	Epoxyethane	Ethylene oxide
75-56-9	Epoxypropane	Propylene oxide
117-81-7	Erqoplast FDO	Dioctyl phthalate
117-81-7	Erqoplast FDO-S	Dioctyl phthalate
85-44-9	ESEN	Phthalic anhydride
133-06-2	Esso funqicide 046	Captan
71-55-6	Ethana NU	Trichloroethane, 1,1,1-
75-07-0	Ethanal	Acetaldehyde
55-18-5	Ethanamine, n-ethyl-n-nitroso- (9CI)	Nitrosodiethylamine, n-
71-55-6	Ethane, 1,1,1-trichloro- (8CI, 9CI)	Trichloroethane, 1,1,1-
72-43-5	Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)- (8CI)	Methoxychlor
76-13-1	Ethane, 1,1,2-trichloro-1,2,2-trifluoro- (8CI, 9CI)	Trifluorotrichloroethane
505-60-2	Ethane, 1,1'-thiobis[2-chloro-	Mustard gas
110-80-5	Ethanol, 2-ethoxy- (8CI, 9CI)	Ethylene glycol ethyl ether
75-35-4	Ethene, 1,1-dichloro- (9CI)	Vinylidene chloride (1,1-Dichloroethene)
75-01-4	Ethene, chloro- (9CI)	Vinyl chloride
127-18-4	Ethene, tetrachloro- (9CI)	Perchloroethylene
79-01-6	Ethene, trichloro- (9CI)	Trichloroethylene
75-21-8	Ethene oxide	Ethylene oxide
74-85-1	Ethene (9CI)	Ethylene
79-01-6	Ethinyl trichloride	Trichloroethylene
140-88-5	Ethyl 2-propenoate	Ethyl acrylate
64-17-5	Ethyl alcohol	Ethanol
75-07-0	Ethyl aldehyde	Acetaldehyde
51-79-6	Ethyl carbamate	Urethane
110-80-5	Ethyl Cellosolve	Ethylene glycol ethyl ether
75-00-3	Ethyl chloride	Chloroethane
78-93-3	Ethyl methyl ketone	Methyl ethyl ketone
84-66-2	Ethyl phthalate	Diethyl phthalate
140-88-5	Ethyl propenoate	Ethyl acrylate
100-41-4	Ethylbenzol	Ethyl benzene

CAS #	SYNONYMS	CHEMICAL NAME
75-35-4	Ethylene, 1,1-dichloro- (8CI)	Vinylidene chloride (1,1-Dichloroethane)
75-01-4	Ethylene, chloro- (8CI)	Vinyl chloride
127-18-4	Ethylene, tetrachloro- (8CI)	Perchloroethylene
79-01-6	Ethylene, trichloro- (8CI)	Trichloroethylene
107-21-1	Ethylene alcohol	Ethylene glycol
106-93-4	Ethylene dibromide	Dibromoethane, 1,2-
107-06-2	Ethylene dichloride	Dichloroethane, 1,2-
107-21-1	Ethylene dihydrate	Ethylene glycol
110-80-5	Ethylene glycol monoethyl ether	Ethylene glycol ethyl ether
127-18-4	Ethylene tetrachloride**	Perchloroethylene
79-01-6	Ethylene trichloride	Trichloroethylene
79-06-1	Ethylenecarboxamide	Acrylamide
117-81-7	Ethylhexyl phthalate	Dioctyl phthalate
75-21-8	ETO	Ethylene oxide
74-90-8	Evercyn	Hydrogen cyanide
117-81-7	Eviplast 80	Dioctyl phthalate
117-81-7	Eviplast 81	Dioctyl phthalate
7664-38-2	EVITs	Phosphoric acid (as P2O5)
10049-04-4	EZ Flow	Chlorine dioxide
7440-50-8	E-Copper	Copper
7440-50-8	E-Cu57	Copper
76-13-1	F 113	Trifluorotrichloroethane
50-00-0	Fannoform	Formaldehyde
1332-21-4	FAPM 410-120	Asbestos
76-13-1	FC 113	Trifluorotrichloroethane
127-18-4	Fedal-Un	Perchloroethylene
58-89-9	Fenoform forte	Lindane
75-71-8	Feon (12)	Difluorodichloromethane
131-11-3	Fermine	Dimethyl phthalate
1332-21-4	Ferodo C3C	Asbestos
117-81-7	Fleximel	Dioctyl phthalate
117-81-7	Flexol DOP	Dioctyl phthalate
133-06-2	Flit 406	Captan
79-01-6	Fluate	Trichloroethylene
56-23-5	FLukoids	Carbon tetrachloride
7664-39-3	Fluorhydric acid	Fluorides (as HF)

CAS #	SYNONYMS	CHEMICAL NAME
76-13-1	Fluorocarbon 113	Trifluorotrichloroethane
7440-02-0	FM 1208	Nickel
76-13-1	Forane 113	Trifluorotrichloroethane
50-00-0	Formaldehyde, gas	Formaldehyde
50-00-0	Formaldehyde solution	Formaldehyde
50-00-0	Formalin	Formaldehyde
50-00-0	Formalith	Formaldehyde
50-00-0	Formic aldehyde	Formaldehyde
74-90-8	Formic anammonide	Hydrogen cyanide
50-00-0	Formol	Formaldehyde
74-90-8	Formonitrile	Hydrogen cyanide
58-89-9	Forst-Nexen	Lindane
127-18-4	Freon 1110	Perchloroethylene
76-13-1	Freon 113TR-T	Trifluorotrichloroethane
76-13-1	Freon 113**	Trifluorotrichloroethane
1320-37-2	Freon 114	Dichloro-1,1,2,2,-tetrafluoro ethane, 1,1-
75-45-6	Freon 22	Chlorodifluoromethane
76-13-1	Freon TF	Trifluorotrichloroethane
107-21-1	Fridex	Ethylene glycol
76-13-1	Frigen 113	Trifluorotrichloroethane
76-13-1	Frigen 113A	Trifluorotrichloroethane
76-13-1	Frigen 113TR	Trifluorotrichloroethane
76-13-1	Frigen TR-N	Trifluorotrichloroethane
76-13-1	Frigen TR-T	Trifluorotrichloroethane
107-13-1	Fumigrain	Acrylonitrile
87-86-5	Fungifen	Pentachlorophenol
133-06-2	Fungus ban type II	Captan
50-00-0	Fyde	Formaldehyde
58-89-9	Gamacid	Lindane
58-89-9	Gamma benzene hexachloride	Lindane
58-89-9	Gammalin	Lindane
58-89-9	Gammalin 20	Lindane
58-89-9	Gammaterr	Lindane
58-89-9	Gamma-HCH	Lindane
58-89-9	Gammexane	Lindane
7440-50-8	GE 1110	Copper

CAS #	SYNONYMS	CHEMICAL NAME
76-13-1	Genetron 113	Trifluorotrichloroethane
58-89-9	Geobilan	Lindane
58-89-9	Geolin G 3	Lindane
79-01-6	Germalgene	Trichloroethylene
58-89-9	Gexane	Lindane
55-63-0	Gilucor nitro	Nitroglycerin
55-63-0	Glonoin	Nitroglycerin
7440-41-7	Glucinium	Beryllium and compounds
55-63-0	Glycerin trinitrate	Nitroglycerin
55-63-0	Glycerol trinitrate	Nitroglycerin
55-63-0	Glyceryl nitrate	Nitroglycerin
55-63-0	Glyceryl trinitrate	Nitroglycerin
107-21-1	Glycol alcohol	Ethylene glycol
110-80-5	Glycol monoethyl ether	Ethylene glycol ethyl ether
107-21-1	Glycol (6CI, 7CI)	Ethylene glycol
133-06-2	Glyodex 37-22	Captan
117-81-7	Good-rite GP 264	Dioctyl phthalate
77-47-4	Graphlox	Hexachlorocyclopentadiene
87-86-5	Grundier Arbezol	Pentachlorophenol
55-63-0	GTN	Nitroglycerin
74-83-9	Halon 1001	Methyl bromide
74-83-9	Haltox	Methyl bromide
67-63-0	Hartosol	Isopropyl alcohol
7440-02-0	HCA 1	Nickel
58-89-9	HCC	Lindane
58-89-9	HCCH	Lindane
58-89-9	HCH	Lindane
7647-01-0	HCL	Hydrogen chloride
57-74-9	HCS 3260	Chlordane
58-89-9	Heclotox	Lindane
71-36-3	Hemostyp	Butanol, n-
58-89-9	Hexa	Lindane
133-06-2	Hexacap	Captan
58-89-9	Hexachloran	Lindane
58-89-9	Hexachlorane	Lindane
58-89-9	Hexachlorocyclohexane	Lindane

C A S #	SYNONYMS	CHEMICAL NAME
77-47-4	Hexachloro-1,3-cyclopentadiene	Hexachlorocyclopentadiene
58-89-9	Hexacide	Lindane
110-82-7	Hexahydrobenzene	Cyclohexane
110-82-7	Hexamethylene	Cyclohexane
110-82-7	Hexanaphthene	Cyclohexane
58-89-9	Hexaverm	Lindane
108-10-1	Hexone	Methyl isobutyl ketone
58-89-9	Hexyclan	Lindane
58-89-9	Hilbeech	Lindane
58-89-9	Hortex	Lindane
120-82-1	Hostetex L-PEC	Trichlorobenzene, 1,2,4-
77-47-4	HRS 1655	Hexachlorocyclopentadiene
1344-28-1	HS 2	Aluminum oxide
85-44-9	HT 901	Phthalic anhydride
58-89-9	Hungaria L7	Lindane
22-66-7	Hydrazobenzene	Diphenolhydrazine, 1,2-
7647-01-0	Hydrochloric acid gas	Hydrogen chloride
74-90-8	Hydrocyanic acid (8CI, 9CI)	Hydrogen cyanide
7664-39-3	Hydrofluoric acid gas	Fluorides (as HF)
7664-39-3	Hydrofluoric acid gas	Fluorides (as HF) - gaseous, during growing season
7664-39-3	Hydrofluoric acid (8CI,9CI)	Fluorides (as HF)
7664-39-3	Hydrogen fluorides	Fluorides (as HF) - total, during growing season
7697-37-2	Hydrogen nitrate	Nitric acid
108-95-2	Hydroxybenzene	Phenol
1319-77-3	Hydroxytoluene	Cresols
71-55-6	ICI-CF 2	Trichloroethane, 1,1,1-
67-63-0	Imsol A	Isopropyl alcohol
71-55-6	Inhibisol	Trichloroethane, 1,1,1-
76-13-1	Isceon 113	Trifluorotrichloroethane
74-83-9	Isobrome	Methyl bromide
108-10-1	Isobutyl methyl ketone	Methyl isobutyl ketone
584-84-9	Isocyanic acid, 4-Methyl-m-phenylene ester (8CI)	Toluene-2,4-diisocyanate
101-68-8	Isocyanic acid, methylenedi-p-phenylene ester (6CI, 8CI)	Methane diphenyl diisocyanate
67-63-0	Isohol	Isopropyl alcohol
67-63-0	Isopropanol	Isopropyl alcohol
108-10-1	Isopropylacetone	Methyl isobutyl ketone

C A S #	SYNONYMS	CHEMICAL NAME
62-56-6	Isothiourea	Thiourea
108-90-7	I.P. Carrier T 40	Monochlorobenzene
58-89-9	Jacutin	Lindane
1344-28-1	JISC 3108	Aluminum oxide
1344-28-1	JISC 3110	Aluminum oxide
7439-96-5	JIS-G 1213	Manganese compounds (as Mn) - including permanganates
1344-28-1	K 102	Aluminum oxide
1344-28-1	K 102 (metal)	Aluminum oxide
1332-21-4	K 6-2-	Asbestos
7440-50-8	Kafar copper	Copper
133-06-2	Kaptan	Captan
76-13-1	Khladon 113	Trifluorotrichloroethane
55-63-0	Klavikordal	Nitroglycerin
117-81-7	Kodaflex DOP	Dioctyl phthalate
58-89-9	Kokotine	Lindane
58-89-9	Kwell	Lindane
1344-28-1	L 1018	Aluminum oxide
1344-28-1	L 16	Aluminum oxide
7440-22-4	L 3	Silver
58-89-9	Lasochron	Lindane
87-86-5	Lauxtol	Pentachlorophenol
7439-92-1	Lead element	Lead and compounds
7439-92-1	Lead flake	Lead and compounds
7439-92-1	Lead S 2	Lead and compounds
76-13-1	Ledon 113	Trifluorotrichloroethane
58-89-9	Lendine	Lindane
55-63-0	Lenitral	Nitroglycerin
58-89-9	Lentox	Lindane
58-89-9	Lindatox	Lindane
58-89-9	Lindenal	Lindane
58-89-9	Lindex	Lindane
58-89-9	Lindosep	Lindane
58-89-9	Lintox	Lindane
58-89-9	Linvur	Lindane
87-86-5	Liroprem	Pentachlorophenol

CAS #	SYNONYMS	CHEMICAL NAME
58-89-9	Lorexane	Lindane
7440-66-6	LS 2	Zinc
67-63-0	Lutosol	Isopropyl alcohol
50-00-0	Lysoform	Formaldehyde
7440-50-8	M 1	Copper
57-74-9	M 140	Chlordane
7440-50-8	M 3	Copper
1332-21-4	M 3-60	Asbestos
1332-21-4	M 4-5	Asbestos
1332-21-4	M 5-60	Asbestos
7440-50-8	M3r	Copper
7440-50-8	M3s	Copper
107-21-1	Macrogol 400 BPC	Ethylene glycol
107-02-8	Magnacide H	Acrolein
108-31-6	Maleic acid anhydride	Maleic anhydride
133-06-2	Malipur	Captan
7439-96-5	Manganese element	Manganese compounds (as Mn) - including permanganates
7439-96-5	Manganese-55	Manganese compounds (as Mn) - including permanganates
72-43-5	Mariate	Methoxychlor
101-14-4	MBOCA	Methylenebis (2-chloroaniline), 4,4'-
108-90-7	MCB	Monochlorobenzene
101-68-8	MDI	Methane diphenyl diisocyanate
7439-97-6	Mercury element	Mercury
133-06-2	Merpan	Captan
1344-28-1	Metana	Aluminum oxide
80-62-6	Methacrylic acid methyl ester (6CI, 8CI)	Methyl methacrylate
80-62-6	Methacrylic acid methyl ester (7CI)	Methyl methacrylate
50-00-0	Methaldehyde	Formaldehyde
50-00-0	Methanal	Formaldehyde
74-83-9	Methane, bromo- (8CI, 9CI)	Methyl bromide
74-87-3	Methane, chloro (8CI, 9CI)	Methyl chloride
75-09-2	Methane, dichloro- (8CI, 9CI)	Methylene chloride
56-23-5	Methane, tetrachloro- (9CI)	Carbon tetrachloride
67-66-3	Methane, trichloro- (9CI)	Chloroform
96-33-3	Methoxycarbonylethylene	Methyl acrylate
72-43-5	Methoxy-DDT	Methoxychlor

CAS #	SYNONYMS	CHEMICAL NAME
80-62-6	Methyl 2-methylpropanoate	Methyl methacrylate
80-62-6	Methyl 2-methyl-2-propanoate	Methyl methacrylate
67-56-1	Methyl alcohol	Methanol
50-00-0	Methyl aldehyde	Formaldehyde
67-56-1	Methyl hydroxide	Methanol
67-64-1	Methyl ketone (6CI)	Acetone
96-33-3	Methyl propanoate	Methyl acrylate
96-33-3	Methyl prop-2-enoate	Methyl acrylate
123-38-6	Methylacetaldehyde	Propionaldehyde
71-55-6	Methylchloroform	Trichloroethane, 1,1,1-
101-68-8	Methylene bis(phenylisocyanate) (MBI)	Methane diphenyl diisocyanate
75-09-2	Methylene dichloride	Methylene chloride
50-00-0	Methylene oxide	Formaldehyde
101-68-8	Methylenebisphenylene diisocyanate	Methane diphenyl diisocyanate
101-68-8	Methylenebis(4-isocyanatobenzene)	Methane diphenyl diisocyanate
101-68-8	Methylenebis(4-phenyl isocyanate)	Methane diphenyl diisocyanate
101-68-8	Methylenebis(4-phenylene isocyanate)	Methane diphenyl diisocyanate
101-68-8	Methylenebis(p-phenyl isocyanate)	Methane diphenyl diisocyanate
101-68-8	Methylenebis(p-phenylene isocyanate)	Methane diphenyl diisocyanate
101-68-8	Methylenebis-p-phenylene diisocyanate	Methane diphenyl diisocyanate
101-68-8	Methylenedi-p-phenylene diisocyanate	Methane diphenyl diisocyanate
101-68-8	Methylenedi-p-phenylene isocyanate	Methane diphenyl diisocyanate
67-56-1	Methylol	Methanol
71-36-3	Methylolpropane	Butanol, n-
75-56-9	Methyloxirane	Propylene oxide
1319-77-3	Methylphenol	Cresols
71-55-6	Methyltrichloromethane	Trichloroethane, 1,1,1-
72-43-5	Metox	Methoxychlor
72-43-5	Mezox K	Methoxychlor
58-89-9	Mglawik L	Lindane
108-10-1	MIBK	Methyl isobutyl ketone
133-06-2	Micro-check 12	Captan
108-10-1	MIK	Methyl isobutyl ketone
58-89-9	Milbol 49	Lindane
131-11-3	Mipax	Dimethyl phthalate
80-62-6	MMA	Methyl methacrylate

CAS #	SYNONYMS	CHEMICAL NAME
12108-13-3	MMT	Methylcyclopentadienyl manganese tricarbonyl
7782-50-5	Molecular chlorine	Chlorine
74-83-9	Monobromomethane	Methyl bromide
75-01-4	Monochloroethylene	Vinyl chloride
74-87-3	Monochloromethane	Methyl chloride
107-21-1	Monoethylene glycol	Ethylene glycol
108-95-2	Monohydroxybenzene	Phenol
67-56-1	Monohydroxymethane	Methanol
108-95-2	Monophenol	Phenol
50-00-0	Morbicid	Formaldehyde
91-20-3	Moth flakes	Naphthalene
1332-21-4	Mountain cork	Asbestos
1332-21-4	Mountain leather	Asbestos
1332-21-4	Mountain wood	Asbestos
58-89-9	Mszycol	Lindane
7647-01-0	Muriatic acid	Hydrogen chloride
55-63-0	Myoglycerin	Nitroglycerin
55-18-5	n,n-Diethylnitrosoamine	Nitrosodiethylamine, n-
7440-02-0	N1	Nickel
91-20-3	Naphthalene (8CI, 9CI)	Naphthalene
91-20-3	Naphthaline	Naphthalene
79-01-6	Narcogen	Trichloroethylene
79-01-6	Narkosoid	Trichloroethylene
75-09-2	Narkotil	Methylene chloride
123-91-1	NE 220	Dioxane, 1,4-
84-66-2	Neantine	Diethyl phthalate
56-23-5	Necatorina	Carbon tetrachloride
127-18-4	Nema	Perchloroethylene
58-89-9	Neo-Scabicidol	Lindane
133-06-2	Neracid	Captan
58-89-9	Nexen FB	Lindane
58-89-9	Nexit	Lindane
58-89-9	Nexit-Stark	Lindane
58-89-9	Nexol-E	Lindane
55-63-0	NG	Nitroglycerin
7440-02-0	Ni 0901S (Harshaw)	Nickel

C A S #	SYNONYMS	CHEMICAL NAME
7440-02-0	Ni 233	Nickel
7440-02-0	Ni 270	Nickel
7440-02-0	Nickel 270	Nickel
7440-02-0	Nickel 4303T	Nickel
7440-02-0	Nickel element	Nickel
58-89-9	Nicochloran	Lindane
55-63-0	Niglin	Nitroglycerin
55-63-0	Niglycon	Nitroglycerin
7697-37-2	Nital	Nitric acid
55-63-0	Nitora	Nitroglycerin
55-63-0	Nitrin	Nitroglycerin
55-63-0	Nitrine	Nitroglycerin
55-63-0	Nitrine-TDC	Nitroglycerin
55-63-0	Nitroglycerol	Nitroglycerin
55-63-0	Nitroglyn	Nitroglycerin
55-63-0	Nitrol	Nitroglycerin
55-63-0	Nitrol (pharmaceutical)	Nitroglycerin
55-63-0	Nitrolan	Nitroglycerin
55-63-0	Nitroletten	Nitroglycerin
55-63-0	Nitrolingual	Nitroglycerin
55-63-0	Nitrolowe	Nitroglycerin
55-63-0	Nitromel	Nitroglycerin
55-63-0	Nitrong	Nitroglycerin
55-63-0	Nitrorectal	Nitroglycerin
55-63-0	Nitroretard	Nitroglycerin
55-18-5	Nitrosodiethylamine	Nitrosodiethylamine, n-
55-63-0	Nitrostabilin	Nitroglycerin
55-63-0	Nitrostat	Nitroglycerin
55-63-0	Nitrozell retard	Nitroglycerin
55-63-0	Nitro-Dur	Nitroglycerin
55-63-0	Nitro-ient	Nitroglycerin
7664-41-7	Nitro-Sil	Ammonia
55-63-0	Nitro-Span	Nitroglycerin
7697-37-2	Nitryl hydroxide	Nitric acid
55-63-0	NK 843	Nitroglycerin
1344-28-1	Noral Aluminium	Aluminum oxide

CAS #	SYNONYMS	CHEMICAL NAME
1344-28-1	Noral Extra Fine Lining Grade	Aluminum oxide
1344-28-1	Noral Ink Grade Aluminium	Aluminum oxide
107-21-1	Norkool	Ethylene glycol
7440-02-0	NP 2	Nickel
107-02-8	NSC 8819	Acrolein
55-63-0	NTG	Nitroglycerin
131-11-3	NTM	Dimethyl phthalate
55-63-0	Nysconitrine	Nitroglycerin
71-36-3	N-Butan-1-ol	Butanol, n-
71-36-3	N-Butyl alcohol	Butanol, n-
55-18-5	n-Ethyl-n-nitrosoethanamine	Nitrosodiethylamine, n-
684-93-5	n-Methyl-n-nitrosourea	Nitroso-n-methylurea, n-
55-18-5	n-Nitroso-n,n-diethylamine	Nitrosodiethylamine, n-
123-38-6	N-Propanal	Propionaldehyde
67-63-0	n-Propan-2-ol	Isopropyl alcohol
133-06-2	N-Trichloromethyl thio-3a,4,7,7a-tetrahydro phthalimide	Captan
133-06-2	N-[(Trichloromethyl)thio] tetrahydrophthalimide	Captan
91-94-1	o,o'-Dichlorobenzidine	Dichlorobenzidine, 3,3-
57-74-9	Octachloro-4,7-methanotetrahydroindane	Chlordane
117-81-7	Octoil	Dioctyl phthalate
7440-50-8	OFHC	Copper
7440-50-8	OFHC Copper	Copper
7440-50-8	OFHC Cu	Copper
7664-93-9	Oil of vitriol	Sulphuric acid
57-74-9	Oktaterr	Chlordane
74-85-1	Olefiant gas	Ethylene
58-89-9	Omnitox	Lindane
7664-38-2	Orthophosphoric acid	Phosphoric acid (as P2O5)
58-89-9	Ovadziak	Lindane
58-89-9	Owadziak	Lindane
75-21-8	Oxacyclopropane	Ethylene oxide
75-21-8	Oxane	Ethylene oxide
75-56-9	Oxirane, methyl- (9CI)	Propylene oxide
110-80-5	Oxitol	Ethylene glycol ethyl ether
50-00-0	Oxomethane	Formaldehyde
108-95-2	Oxybenzene	Phenol

CAS #	SYNONYMS	CHEMICAL NAME
75-21-8	Oxydoethane	Ethylene oxide
75-21-8	Oxyfume	Ethylene oxide
75-21-8	Oxyfume 12	Ethylene oxide
50-00-0	Oxymethylene	Formaldehyde
75-21-8	Oxyrane, dihydro-	Ethylene oxide
75-21-8	Oxyrane (9CI)	Ethylene oxide
84-66-2	o-Benzenedicarboxylic acid diethyl ester	Diethyl phthalate
95-50-1	o-Dichlorobenzene	Dichlorobenzene, ortho-
119-93-7	o-Tolidine	Dimethylbenzidine, 3,3'-
1332-21-4	P 5-50	Asbestos
72-43-5	p,p-Dimethoxydiphenyltrichloroethane	Methoxychlor
72-43-5	p,p-DMDT	Methoxychlor
72-43-5	p,p-Methoxychlor	Methoxychlor
101-68-8	p,p-Methylenebis(phenyl isocyanate)	Methane diphenyl diisocyanate
101-68-8	p,p'-Diphenylmethane diisocyanate	Methane diphenyl diisocyanate
84-66-2	Palatinol A	Diethyl phthalate
117-81-7	Palatinol AH	Dioctyl phthalate
131-11-3	Palatinol M	Dimethyl phthalate
1344-28-1	PAP 1	Aluminum oxide
50-00-0	Paraform	Formaldehyde
7439-92-1	Pb-S 100	Lead and compounds
87-86-5	PCP (pesticide)	Pentachlorophenol
58-89-9	Pedraczak	Lindane
80-62-6	Pegalan	Methyl methacrylate
87-86-5	Penchlorol	Pentachlorophenol
82-68-8	Pentachloronitrobanzene	Quintozene
77-47-4	Perchlorocyclopentadiene	Hexachlorocyclopentadiene
56-23-5	Perchloromethane**	Carbon tetrachloride
127-18-4	Perclene	Perchloroethylene
55-63-0	Perglottal	Nitroglycerin
87-86-5	Permasan	Pentachlorophenol
127-18-4	PerSec	Perchloroethylene
67-63-0	Petrohol	Isopropyl alcohol
58-89-9	Pflanzol	Lindane
71-43-2	Phene	Benzene

CAS #	SYNONYMS	CHEMICAL NAME
100-42-5	Phenethylene	Styrene
108-95-2	Phenic acid	Phenol
114-26-1	Phenol, 2-(1-methyloxy)-methylcarbamate	Propoxur
1319-77-3	Phenol, methyl- (9CI)	Cresols
87-86-5	Phenol, pentachloro- (8CI, 9CI)	Pentachlorophenol
108-95-2	Phenyl alcohol**	Phenol
108-90-7	Phenyl chloride	Monochlorobenzene
108-95-2	Phenyl hydrate	Phenol
71-43-2	Phenyl hydride	Benzene
108-95-2	Phenyl hydroxide	Phenol
92-52-4	Phenylbenzene	Biphenyl
100-41-4	Phenylethane	Ethyl benzene
100-42-5	Phenylethene	Styrene
100-42-5	Phenylethylene	Styrene
108-95-2	Phenylic acid	Phenol
108-95-2	Phenylic alcohol	Phenol
75-44-5	Phosgen	Phosgene
52-68-6	Phosphonic acid, (2,2,2-trichloro-1-hydroxyethyl)-, dimethyl	Trichlorfon
62-73-7	Phosphoric acid, 2,2-dichloroethenyl dimethyl ester	Dichlorvos
961-11-5	Phosphoric acid, 2-chloro-1-(2,3,5-trichlorophenyl) ethenyld	Tetrachlorvinphos
56-38-2	Phosphorothioic acid, o, o-diethyl-o-(4-nitrophenyl)ester	Parathion
85-44-9	Phthalandione	Phthalic anhydride
85-44-9	Phthalanhydride	Phthalic anhydride
117-81-7	Phthalic acid, bis(2-ethylhexyl) ester (8CI)	Dioctyl phthalate
84-66-2	Phthalic acid, diethyl ester (6CI, 8CI)	Diethyl phthalate
131-11-3	Phthalic acid, dimethyl ester(6CI, 8CI)	Dimethyl phthalate
84-66-2	Phthalol	Diethyl phthalate
117-81-7	Pittsburgh PX-138	Dioctyl phthalate
84-66-2	Placidol E	Diethyl phthalate
58-89-9	PLK	Lindane
1344-28-1	PO 100	Aluminum oxide
1344-28-1	PO 100 (metal)	Aluminum oxide
87-86-5	Pol Nu	Pentachlorophenol
110-80-5	Poly-Solv EE	Ethylene glycol ethyl ether
87-86-5	Preventol P	Pentachlorophenol
67-63-0	PRO	Isopropyl alcohol

C A S #	SYNONYMS	CHEMICAL NAME
123-38-6	Propaldehyde	Propionaldehyde
123-38-6	Propanal (9CI)	Propionaldehyde
123-38-6	Propanaldehyde	Propionaldehyde
75-56-9	Propane, 1,1-epoxy- (9CI)	Propylene oxide
78-87-5	Propane, 1,2-dichloro- (8CI, 9CI)	Propylene dichloride
55-63-0	Propanetriol trinitrate	Nitroglycerin
67-64-1	Propanone	Acetone
107-02-8	Propenal	Acrolein
79-06-1	Propenamide	Acrylamide
115-07-1	Propene	Propylene
75-56-9	Propene oxide	Propylene oxide
107-13-1	Propenenitrile	Acrylonitrile
123-38-6	Propional	Propionaldehyde
123-38-6	Propionic aldehyde	Propionaldehyde
67-63-0	Propol	Isopropyl alcohol
71-23-8	Propyl alcohol	Propanol, n-
71-36-3	Propyl carbinol	Butanol, n-
123-38-6	Propylaldehyde	Propionaldehyde
78-87-5	Propylene chloride	Propylene dichloride
78-87-5	Propylene dichloride	Propylene dichloride
75-56-9	Propylene epoxide	Propylene oxide
123-38-6	Propylic aldehyde	Propionaldehyde
107-02-8	Prop-2-en-1-al	Acrolein
74-90-8	Prussic acid	Hydrogen cyanide
62-56-6	Pseudothiourea	Thiourea
62-56-6	Pseudourea, 2-thio- (6CI, 7CI)	Thiourea
10049-04-4	Purogene	Chlorine dioxide
67-64-1	Pyroacetic ether	Acetone
71-43-2	Pyrobenzol	Benzene
123-91-1	p-Dioxan	Dioxane, 1,4-
123-91-1	p-Dioxan (8CI)	Dioxane, 1,4-
7439-97-6	Quecksilber	Mercury
58-89-9	Quellada	Lindane
7439-97-6	Quicksilver	Mercury
56-23-5	R 10	Carbon tetrachloride
56-23-5	R 10 (refrigerant)	Carbon tetrachloride

CAS #	SYNONYMS	CHEMICAL NAME
76-13-1	R 113	Trifluorotrichloroethane
76-13-1	R 113 (halocaarbon)	Trifluorotrichloroethane
67-66-3	R 20	Chloroform
67-66-3	R 20 (refrigerant)	Chloroform
75-09-2	R 30	Methylene chloride
74-87-3	R 40	Methyl chloride
74-83-9	R 40B1	Methyl bromide
7664-41-7	R 717	Ammonia
7440-50-8	Rame	Copper
107-21-1	Ramp	Ethylene glycol
7440-02-0	Raney alloy	Nickel
7440-50-8	Raney copper	Copper
7440-02-0	Raney nickel	Nickel
7440-02-0	RCH 55/5	Nickel
76-13-1	Refrigerant 113	Trifluorotrichloroethane
76-13-1	Refrigerant R 113	Trifluorotrichloroethane
117-81-7	Reomol D 79P	Dioctyl phthalate
131-11-3	Repeftal	Dimethyl phthalate
85-44-9	Retarder AK	Phthalic anhydride
85-44-9	Retarder ESEN	Phthalic anhydride
85-44-9	Retarder PD	Phthalic anhydride
7440-66-6	Rheinzink	Zinc
1344-28-1	S 40	Aluminum oxide
1344-28-1	S 40 (metal)	Aluminum oxide
58-89-9	Sang-gammaa	Lindane
87-86-5	Santophen 20	Pentachlorophenol
1344-28-1	SAP 120	Aluminum oxide
1344-28-1	SAP 725N	Aluminum oxide
85-44-9	Sconoc 7	Phthalic anhydride
67-63-0	sec-Propyl alcohol	Isopropyl alcohol
7782-49-2	Selenium element	Selenium
7440-22-4	Shell silver	Silver
117-81-7	Sicol 150	Dioctyl phthalate
7440-22-4	Silflake 135	Silver
7440-22-4	Silpowder 130	Silver
7440-22-4	Silver atom	Silver

CAS #	SYNONYMS	CHEMICAL NAME
7440-22-4	Silver element	Silver
7440-22-4	Silver metal	Silver
7440-22-4	Silvest TCG 1	Silver
7439-92-1	SO	Lead and compounds
1310-73-2	Soda, caustic	Sodium hydroxide
1310-73-2	Sodium hydroxide (Na(OH)) (9CI)	Sodium hydroxide
75-09-2	Solaesthin	Methylene chloride
75-09-2	Solmethine	Methylene chloride
84-66-2	Solvanol	Diethyl phthalate
131-11-3	Solvanom	Dimethyl phthalate
131-11-3	Solvarone	Dimethyl phthalate
7664-38-2	Sonac	Phosphoric acid (as P2O5)
55-63-0	Soup	Nitroglycerin
7664-41-7	Spirit of Hartshorn	Ammonia
1344-28-1	Spota Mobil 801	Aluminum oxide
58-89-9	Spritzlindane	Lindane
58-89-9	Spritz-Rapidin	Lindane
58-89-9	Spruehpflanzol	Lindane
7440-22-4	Sr 999	Silver
117-81-7	Staflex DOP	Dioctyl phthalate
1344-28-1	STAPA 20HK	Aluminum oxide
67-63-0	Sterisol Hand Disinfectant	Isopropyl alcohol
7440-36-0	Stibium	Antimony and compounds
58-89-9	Streunex	Lindane
100-42-5	Styrene (8CI)	Styrene
100-42-5	Styrol	Styrene
100-42-5	Styrole	Styrene
100-42-5	Styrolene	Styrene
100-42-5	Styropol SO	Styrene
1395-21-7	Subtilisin	Detergent enzyme
7664-93-9	Sulfuric acid	Sulphuric acid
50-00-0	Superlysoform	Formaldehyde
1332-21-4	Synthetic fibres, abestos	Asbestos
55-63-0	S.N.G.	Nitroglycerin
71-55-6	Tafclean	Trichloroethane, 1,1,1-
7440-50-8	TAI	Copper

CAS #	SYNONYMS	CHEMICAL NAME
67-63-0	Takineocol	Isopropyl alcohol
58-89-9	TAP 5	Lindane
91-20-3	Tar camphor	Naphthalene
57-74-9	Tat Chlor 4	Chlordane
7440-22-4	TCG 1	Silver
7440-22-4	TCG 7R	Silver
7440-50-8	TCuP1	Copper
1319-77-3	Tekresol	Cresols
55-63-0	Temponitrin	Nitroglycerin
74-83-9	Terabol	Methyl bromide
75-65-0	Tertiary butanol	Butyl alcohol, tertiary-
107-21-1	Tescol	Ethylene glycol
127-18-4	Tetlen	Perchloroethylene
127-18-4	Tetracap	Perchloroethylene
127-18-4	Tetrachloroethene	Perchloroethylene
127-18-4	Tetrachloroethylene	Perchloroethylene
56-23-5	Tetrachloromethane	Carbon tetrachloride
56-23-5	Tetrafinol	Carbon tetrachloride
56-23-5	Tetraform	Carbon tetrachloride
127-18-4	Tetraquer	Perchloroethylene
127-18-4	Tetraleno	Perchloroethylene
56-23-5	Tetrasol	Carbon tetrachloride
127-18-4	Tetropil	Perchloroethylene
92-52-4	Tetrosin LY	Biphenyl
108-90-7	Tetrosin SP	Monochlorobenzene
85-44-9	TGL 6525	Phthalic anhydride
62-56-6	Thiocarbamide	Thiourea
79-01-6	Threthylen	Trichloroethylene
79-01-6	Threthylene	Trichloroethylene
62-56-6	THU	Thiourea
57-74-9	Toxichlor	Chlordane
108-31-6	Toxilic anhydride	Maleic anhydride
79-01-6	Trethylene	Trichloroethylene
79-01-6	Tri	Trichloroethylene
75-25-2	Tribromomethane	Bromoform
79-01-6	Trichloran	Trichloroethylene

CAS #	SYNONYMS	CHEMICAL NAME
79-01-6	Trichloren	Trichloroethylene
71-55-6	Trichloroethane	Trichloroethane, 1,1,1-
79-01-6	Trichloroethene	Trichloroethylene
79-01-6	Trichloroethylene	Trichloroethylene
67-66-3	Trichloroform	Chloroform
67-66-3	Trichloromethane	Chloroform
71-55-6	Trichloromethylmethane	Trichloroethane, 1,1,1-
79-01-6	Triclene	Trichloroethylene
1319-77-3	Tricresol	Cresols
79-01-6	Trielene	Trichloroethylene
79-01-6	Trielin	Trichloroethylene
79-01-6	Trieline	Trichloroethylene
79-01-6	Trilen	Trichloroethylene
79-01-6	Trilene	Trichloroethylene
79-01-6	Trimar	Trichloroethylene
75-65-0	Trimethylcarbinol	Butyl alcohol, tertiary-
75-65-0	Trimethylmethanol	Butyl alcohol, tertiary-
55-63-0	Trinalgon	Nitroglycerin
55-63-0	Trinitrin	Nitroglycerin
55-63-0	Trinitroglycerine	Nitroglycerin
55-63-0	Trinitroglycerol	Nitroglycerin
55-63-0	Trinitrol	Nitroglycerin
58-89-9	Tri-6	Lindane
117-81-7	Truflex DOP	Dioctyl phthalate
62-56-6	TsIZP 34	Thiourea
7440-50-8	TTAI	Copper
1344-28-1	Tuff Mic	Aluminum oxide
75-65-0	T-Butanol	Butyl alcohol, tertiary-
75-21-8	T-Gas	Ethylene oxide
107-21-1	Ucar 17	Ethylene glycol
84-66-2	Unimoll DA	Diethyl phthalate
131-11-3	Unimoll DM	Dimethyl phthalate
56-23-5	Univerm	Carbon tetrachloride
120-82-1	unsym-Trichlorobenzene	Trichlorobenzene, 1,2,4-
2164-17-2	Urea, n,n-dimethyl-n'-[3-(trifluoromethyl) phenyl]-	Fluometon
62-56-6	Urea, thio- (8CI)	Thiourea

CAS #	SYNONYMS	CHEMICAL NAME
1344-28-1	UT 901	Aluminum oxide
7440-22-4	V 9	Silver
7440-62-2	Vanadium element	Vanadium
7440-62-2	Vanadium-51	Vanadium
55-63-0	Vasoglyn	Nitroglycerin
107-13-1	VCN	Acrylonitrile
133-90-4	Vegiben	Chloramben
107-13-1	Ventox	Acrylonitrile
58-89-9	Verindal Ultra	Lindane
56-23-5	Vermoestricid	Carbon tetrachloride
117-81-7	Vestinol AH	Dioctyl phthalate
1344-28-1	VI 5	Aluminum oxide
117-81-7	Vinicizer 80	Dioctyl phthalate
79-06-1	Vinyl amide	Acrylamide
100-42-5	Vinyl benzene	Styrene
100-42-5	Vinyl benzol	Styrene
75-01-4	Vinyl C monomer	Vinyl chloride
107-13-1	Vinyl cyanide	Acrylonitrile
7664-93-9	Vitriol brown oil	Sulphuric acid
85-44-9	Vulkalent B/C	Phthalic anhydride
7664-38-2	WC-Reiniger	Phosphoric acid (as P2O5)
79-01-6	Westrosol	Trichloroethylene
1310-73-2	White caustic	Sodium hydroxide
91-20-3	White tar	Naphthalene
117-81-7	Witcizer 312	Dioctyl phthalate
67-56-1	Wood alcohol	Methanol
87-86-5	Woodtreat A	Pentachlorophenol
1330-20-7	Xylene (8CI)	Xylenes
1330-20-7	Xylol	Xylenes
107-21-1	Zerex	Ethylene glycol
7440-66-6	Zinc element	Zinc
98-82-8	(1-Methylethyl)benzene	Isopropyl benzene
100-41-4	.alpha.-Methyltoluene	Ethyl benzene
71-55-6	.alpha.-T	Trichloroethane, 1,1,1-
71-55-6	.alpha.-Trichloroethane	Trichloroethane, 1,1,1-

CAS #	SYNONYMS	CHEMICAL NAME
110-80-5	.beta.-Ethoxyethanol	Ethylene glycol ethyl ether
67-64-1	.beta.-ketopropane	Acetone
62-56-6	.beta.-Thiopseudourea	Thiourea
58-89-9	.gamma.-1,2,3,4,5,6-Hexachlorocyclohexane	Lindane
58-89-9	.gamma.-666	Lindane
58-89-9	.gamma.-BHC	Lindane
58-89-9	.gamma.-HCH	Lindane
58-89-9	.gamma.-Hexachloran	Lindane
58-89-9	.gamma.-Hexachlorane	Lindane
58-89-9	.gamma.-Hexachlorobenzene	Lindane
58-89-9	.gamma.-Hexachlorocyclohexane	Lindane
58-89-9	.gamma.-Lindane	Lindane
91-94-1	[1,1'-biphenyl]-4,4'-diamine,3,3'-dichloro-(9CI)	Dichlorobenzidine, 3,3-
71-43-2	[6]Annulene	Benzene
624-92-0	[n,n-Dimethylacetamide dimethyl disulphide	Dimethyl disulphide
57-74-9	1'4,7-Methenoindan,1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetra	Chlordane

APPENDIX 2-4

CANADIAN STANDARD INDUSTRIAL CLASSIFICATION CODES

APPENDIX 2-4

CANADIAN STANDARD INDUSTRIAL CLASSIFICATION CODES

Major Group #	Title
04	Logging Industries
10	Food Industries
11	Beverage Industries
12	Tobacco Products Industries
15	Rubber Products Industries
16	Plastic Products Industries
17	Leather and Allied Products Industries
18	Primary Textile Industries
19	Textile Products Industries
24	Clothing Industries
25	Wood Industries
26	Furniture and Fixtures Industries
27	Paper and Allied Products Industries
28	Printing, Publishing and Allied Products Industries
29	Primary Metal Industries
30	Fabricated Metal Products Industries (Except Machinery and Transportational Equipment Industries)
31	Machinery Industries (Except Electrical Machinery)
32	Transportation Equipment Industries
33	Electrical and Electronic Products Industries
35	Non-Metallic Mineral Products Industries
36	Refined Petroleum and Coal Products Industries
37	Chemical and Chemical Products Industries
39	Other Manufacturing Industries

APPENDIX 2-4b

CANADIAN STANDARD INDUSTRIAL CLASSIFICATION CODES FOR THE SECOND PERIOD

Major Group #	Title
01	Agricultural Industries
02	Service Industries Incidental to Agriculture
06	Mining, Quarrying and Oil Wells
07	Crude Petroleum and Natural Gas Industries
08	Quarry and Sand Pit Industries
42	Trade Contracting Industries
45	Transportation Industries
46	Pipeline Transport Industries
49	Municipal Utilities
51	Petroleum Products Industries, Wholesale
63	Automotive Vehicles, Parts and Accessories
86	Health and Social Service Industries
97	Personal and Household Services

APPENDIX 2-4c

CANADIAN STANDARD INDUSTRIAL CLASSIFICATION CODES FOR THE THIRD PERIOD

Major Group #	Title

NO ENTRIES

APPENDIX 2-5

SAMPLE REGISTRATION FORM

[From U.S. E.P.A. SARA Title III Section 313 - Toxic Chemical Release Inventory Reporting Form]

Form Approved OMB No. 2070-0093

Approval Expires: 01/91

Important: Type or print; read instructions before completing form.

EPA U.S. Environmental Protection Agency

TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM

Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act

EPA FORM **R**

PART I. FACILITY IDENTIFICATION INFORMATION

(This space for your optional use.)

Public reporting burden for this collection of information is estimated to vary from 30 to 34 hours per response with an average of 32 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch (PM-223), U.S. EPA, 401 M St., S.W., Washington, D.C. 20460, Attn: TRI Burden; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Paperwork Reduction Project (2070-0093), Washington, D.C. 20503.

1. 1.1 Are you claiming the chemical identity on page 3 trade secret?
[ ] Yes (Answer question 1.2. Attach substantiation forms.) [ ] No (Do not answer 1.2. Go to question 1.3.)

1.2 If "Yes" in 1.1, is this copy [ ] Sanitized [ ] Unsanitized

1.3 Reporting Year 19__

2. CERTIFICATION (Read and sign after completing all sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official

Signature | Date signed

3. FACILITY IDENTIFICATION

3.1 Facility or Establishment Name

Street Address

City | County

State | Zip Code

WHERE TO SEND COMPLETED FORMS:

1. U.S. ENVIRONMENTAL PROTECTION AGENCY
P.O. BOX 70266
WASHINGTON, DC 20024-0266
ATTN: TOXIC CHEMICAL RELEASE INVENTORY

2. APPROPRIATE STATE OFFICE (See instructions Appendix E)

3.2 This report contains information for (Check one): a. [ ] An entire facility b. [ ] Part of a facility

3.3 Technical Contact | Telephone Number (include area code)

3.4 Public Contact | Telephone Number (include area code)

3.5 SIC Code (4 digit) a. | b. | c. | d. | e. | f.

3.6

Latitude			Longitude		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

3.7 Dun & Bradstreet Number(s) a. | b.

3.8 EPA Identification Number(s) (RCRA I.D. No.) a. | b.

3.9 NPDES Permit Number(s) a. | b.

3.10 Receiving Streams or Water Bodies (enter one name per box)
a. | b.
c. | d.
e. | f.

3.11 Underground Injection Well Code (UIC) Identification Number(s) a. | b.

4. PARENT COMPANY INFORMATION

4.1 Name of Parent Company

4.2 Parent Company's Dun & Bradstreet Number

EPA

EPA FORM R

PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES

(This space for your optional use.)

1. PUBLICLY OWNED TREATMENT WORKS (POTWs)

1.1 POTW name		1.2 POTW name	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip

2. OTHER OFF-SITE LOCATIONS (DO NOT REPORT LOCATIONS TO WHICH WASTES ARE SENT ONLY FOR RECYCLING OR REUSE).

2.1 Off-site location name		2.2 Off-site location name	
EPA Identification Number (RCRA ID. No.)		EPA Identification Number (RCRA ID. No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company? [ ] Yes [ ] No		Is location under control of reporting facility or parent company? [ ] Yes [ ] No	

2.3 Off-site location name		2.4 Off-site location name	
EPA Identification Number (RCRA ID. No.)		EPA Identification Number (RCRA ID. No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company? [ ] Yes [ ] No		Is location under control of reporting facility or parent company? [ ] Yes [ ] No	

2.5 Off-site location name		2.6 Off-site location name	
EPA Identification Number (RCRA ID. No.)		EPA Identification Number (RCRA ID. No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company? [ ] Yes [ ] No		Is location under control of reporting facility or parent company? [ ] Yes [ ] No	

[ ] Check if additional pages of Part II are attached. How many? _____

EPA

EPA FORM R

PART III. CHEMICAL-SPECIFIC INFORMATION

(This space for your optional use.)

1. CHEMICAL IDENTITY (Do not complete this section if you complete Section 2.)

1.1 [Reserved]

1.2 CAS Number (Enter the number exactly as it appears on the 313 list. Enter NA if reporting a chemical category.)

1.3 Chemical or Chemical Category Name (Enter the name exactly as it appears on the 313 list.)

1.4 Generic Chemical Name (Complete only if Part I, Section 1.1 is checked "Yes." Generic name must be structurally descriptive.)

2. MIXTURE COMPONENT IDENTITY (Do not complete this section if you complete Section 1.)

2. Generic Chemical Name Provided by Supplier (Limit the name to a maximum of 70 characters (e.g., numbers, letters, spaces, punctuation).)

3. ACTIVITIES AND USES OF THE CHEMICAL AT THE FACILITY (Check all that apply.)

		If produce or import.	
3.1 Manufacture the chemical:	a. [ ] Produce	c. [ ] For on-site use/processing	d. [ ] For sale distribution
	b. [ ] Import	e. [ ] As a byproduct	f. [ ] As an impurity
3.2 Process the chemical:	a. [ ] As a reactant	b. [ ] As a formulation component	c. [ ] As an article component
	d. [ ] Repackaging only		
3.3 Otherwise use the chemical:	a. [ ] As a chemical processing aid	b. [ ] As a manufacturing aid	c. [ ] Ancillary or other use

4. MAXIMUM AMOUNT OF THE CHEMICAL ON-SITE AT ANY TIME DURING THE CALENDAR YEAR

[ ][ ] (enter code)

5. RELEASES OF THE CHEMICAL TO THE ENVIRONMENT ON-SITE

You may report releases of less than 1,000 lbs. by checking ranges under A.1. (Do not use both A.1 and A.2)

		A. Total Release (lbs/yr) A.1 Reporting Ranges 0 / 1–499 / 500–999	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1 Fugitive or non-point air emissions	5.1a	[ ] [ ] [ ]		5.1b [ ]	
5.2 Stack or point air emissions	5.2a	[ ] [ ] [ ]		5.2b [ ]	
5.3 Discharges to receiving streams or water bodies (Enter letter code from Part I Section 3.10 for stream(s) in the box provided.) 5.3.1 [ ]	5.3.1a	[ ] [ ] [ ]		5.3.1b [ ]	C. % From Stormwater 5.3.1c
5.3.2 [ ]	5.3.2a	[ ] [ ] [ ]		5.3.2b [ ]	5.3.2c
5.3.3 [ ]	5.3.3a	[ ] [ ] [ ]		5.3.3b [ ]	5.3.3c
5.4 Underground injection	5.4a	[ ] [ ] [ ]		5.4b [ ]	
5.5 Releases to land					
5.5.1 On-site landfill	5.5.1a	[ ] [ ] [ ]		5.5.1b [ ]	
5.5.2 Land treatment/application farming	5.5.2a	[ ] [ ] [ ]		5.5.2b [ ]	
5.5.3 Surface impoundment	5.5.3a	[ ] [ ] [ ]		5.5.3b [ ]	
5.5.4 Other disposal	5.5.4a	[ ] [ ] [ ]		5.5.4b [ ]	

[ ] (Check if additional information is provided on Part IV–Supplemental Information.)

EPA

EPA FORM R

PART III. CHEMICAL-SPECIFIC INFORMATION (continued)

(This space for your optional use.)

6. TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS

You may report transfers of less than 1,000 lbs. by checking ranges under A.1. (Do not use both A.1 and A.2)	A. Total Transfers (lbs/yr) A.1 Reporting Ranges (0 / 1–499 / 500–999)	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
6.1.1 Discharge to POTW (enter location number from Part II, Section 1) [1] [ ]	[ ] [ ] [ ]		6.1.1b [ ]	
6.2.1 Other off-site location (enter location number from Part II, Section 2) [2] [ ]	[ ] [ ] [ ]		6.2.1b [ ]	6.2.1c [M] [ ]
6.2.2 Other off-site location (enter location number from Part II, Section 2) [2] [ ]	[ ] [ ] [ ]		6.2.2b [ ]	6.2.2c [M] [ ]
6.2.3 Other off-site location (enter location number from Part II, Section 2) [2] [ ]	[ ] [ ] [ ]		6.2.3b [ ]	6.2.3c [M] [ ]

[ ] (Check if additional information is provided on Part IV–Supplemental Information.)

7. WASTE TREATMENT METHODS AND EFFICIENCY

A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes / No
7.1a [ ]	7.1b [ ][ ][ ]	7.1c [ ]	7.1d [ ]	7.1e %	7.1f [ ] [ ]
7.2a [ ]	7.2b [ ][ ][ ]	7.2c [ ]	7.2d [ ]	7.2e %	7.2f [ ] [ ]
7.3a [ ]	7.3b [ ][ ][ ]	7.3c [ ]	7.3d [ ]	7.3e %	7.3f [ ] [ ]
7.4a [ ]	7.4b [ ][ ][ ]	7.4c [ ]	7.4d [ ]	7.4e %	7.4f [ ] [ ]
7.5a [ ]	7.5b [ ][ ][ ]	7.5c [ ]	7.5d [ ]	7.5e %	7.5f [ ] [ ]
7.6a [ ]	7.6b [ ][ ][ ]	7.6c [ ]	7.6d [ ]	7.6e %	7.6f [ ] [ ]
7.7a [ ]	7.7b [ ][ ][ ]	7.7c [ ]	7.7d [ ]	7.7e %	7.7f [ ] [ ]
7.8a [ ]	7.8b [ ][ ][ ]	7.8c [ ]	7.8d [ ]	7.8e %	7.8f [ ] [ ]
7.9a [ ]	7.9b [ ][ ][ ]	7.9c [ ]	7.9d [ ]	7.9e %	7.9f [ ] [ ]
7.10a [ ]	7.10b [ ][ ][ ]	7.10c [ ]	7.10d [ ]	7.10e %	7.10f [ ] [ ]

[ ] (Check if additional information is provided on Part IV–Supplemental Information.)

8. OPTIONAL INFORMATION ON WASTE MINIMIZATION

(Indicate actions taken to reduce the amount of the chemical being released from the facility. See the instructions for coded items and an explanation of what information to include.)

A. Type of Modification (enter code)	B. Quantity of the Chemical in Wastes Prior to Treatment or Disposal: Current reporting year (lbs/yr)	Prior year (lbs/yr)	Or percent change	C. Index	D. Reason for Action (enter code)
[M] [ ]	_____	_____	_____ %	[ ] . [ ]	[R] [ ]

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EPA FORM R
PART IV. SUPPLEMENTAL INFORMATION

Use this section if you need additional space for answers to questions in Part III. Number the lines used sequentially from lines in prior sections (e.g., 5.3.4, 6.1.2, 7.11)

(This space for your optional use.)

ADDITIONAL INFORMATION ON RELEASES OF THE CHEMICAL TO THE ENVIRONMENT ON-SITE (Part III, Section 5.3)

You may report releases of less than 1,000 lbs. by checking ranges under A.1 (Do not use both A.1 and A.2)		A. Total Release (lbs/yr)		B. Basis of Estimate (enter code in box provided)	C. % From Stormwater
		A.1 Reporting Ranges 0 1–499 500–999	A.2 Enter Estimate		
5.3 Discharges to receiving streams or water bodies	5.3. ☐	5.3 a [ ] [ ] [ ]		5.3 b ☐	5.3 c
(Enter letter code from Part I Section 3.10 for stream(s) in the box provided.)	5.3. ☐	5.3 a [ ] [ ] [ ]		5.3 b ☐	5.3 c
	5.3 ☐	5.3 a [ ] [ ] [ ]		5.3 b ☐	5.3 c

ADDITIONAL INFORMATION ON TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS (Part III, Section 6)

You may report transfers of less than 1,000 lbs. by checking ranges under A.1. (Do not use both A.1 and A.2)	A. Total Transfers (lbs/yr)		B. Basis of Estimate (enter code in box provided)	C. Type of Treatment/ Disposal (enter code in box provided)
	A.1 Reporting Ranges 0 1–499 500–999	A.2 Enter Estimate		
6.1. Discharge to POTW (enter location number from Part II, Section 1.) 1 ☐	[ ] [ ] [ ]		6.1. b ☐	
6.2. Other off-site location (enter location number from Part II, Section 2.) 2 ☐	[ ] [ ] [ ]		6.2. b ☐	6.2. c M ☐☐
6.2. Other off-site location (enter location number from Part II, Section 2.) 2 ☐	[ ] [ ] [ ]		6.2. b ☐	6.2. c M ☐☐
6.2. Other off-site location (enter location number from Part II, Section 2.) 2 ☐	[ ] [ ] [ ]		6.2. b ☐	6.2. c M ☐☐

ADDITIONAL INFORMATION ON WASTE TREATMENT METHODS AND EFFICIENCY (Part III, Section 7)

A. General Wastestream (enter code in box provided)	B. Treatment Method (enter code in box provided)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes No
7. a ☐	7. b ☐☐☐	7. c ☐	7. d [ ]	7. e %	7. f [ ] [ ]
7. a ☐	7. b ☐☐☐	7. c ☐	7. d [ ]	7. e %	7. f [ ] [ ]
7. a ☐	7. b ☐☐☐	7. c ☐	7. d [ ]	7. e %	7. f [ ] [ ]
7. a ☐	7. b ☐☐☐	7. c ☐	7. d [ ]	7. e %	7. f [ ] [ ]
7. a ☐	7. b ☐☐☐	7. c ☐	7. d [ ]	7. e %	7. f [ ] [ ]
7. a ☐	7. b ☐☐☐	7. c ☐	7. d [ ]	7. e %	7. f [ ] [ ]
7. a ☐	7. b ☐☐☐	7. c ☐	7. d [ ]	7. e %	7. f [ ] [ ]
7. a ☐	7. b ☐☐☐	7. c ☐	7. d [ ]	7. e %	7. f [ ] [ ]
7. a ☐	7. b ☐☐☐	7. c ☐	7. d [ ]	7. e %	7. f [ ] [ ]
7. a ☐	7. b ☐☐☐	7. c ☐	7. d [ ]	7. e %	7. f [ ] [ ]

APPENDIX 2-6

SAMPLE INSTRUCTIONS

[From U.S. E.P.A. SARA Title III Section 313 - Toxic Chemical Release Inventory Reporting Form R and Instructions]

United States
Environmental Protection
Agency

Office of Toxic
Substances
Washington, D.C. 20460

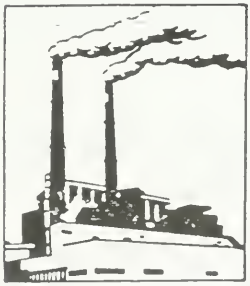
Revised January 1989
EPA 560/4-88-005

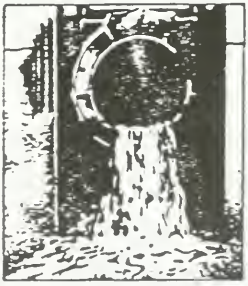
EPA

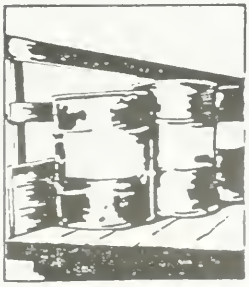
Toxic Chemical Release Inventory Reporting Form R and Instructions

Revised 1988 Version

Section 313
of the Emergency Planning and Community Right-to-Know Act
(Title III of the Superfund Amendments and Reauthorization Act of 1986)







EPA FORM R SUBMISSION CHECKLIST

Before you submit your facility's Form R submission, please review the following checklist to make sure that your report is complete and correct.

Have you:

[ ] Prepared a complete, separate, and independent Form R for each chemical including Parts I, II, III, and IV (pages 1-5)?

[ ] Provided an original signature on Part I, Section 2 for each chemical submission?

[ ] Entered the chemical name and CAS number in Part III, Sections 1.2 and 1.3 (page 3) exactly as they appear on the section 313 chemical list?

[ ] Checked that "NA" is entered, as appropriate, for all items that do not apply to your facility?

[ ] Included your facility's latitude and longitude on Part I, Section 3.6?

[ ] Made a copy of each report to be submitted to the state and a copy of each report for your own files?

If you are claiming a trade secret, have you:

[ ] Provided two complete Form Rs:

- ☐ One that identifies the chemical ("unsanitized"); and
- ☐ One that provides a generic chemical identity ("sanitized")?

[ ] Provided two complete trade secret substantiation forms:

- ☐ One that identifies the chemical ("unsanitized"); and
- ☐ One that provides a generic chemical identity ("sanitized")?

Both Form Rs must include Parts I, II, III, and IV; both must contain an original signature.

[ ] Checked that the sanitized and unsanitized versions are correctly identified in Part I, Section 1.2?

Submit Form R by July 1 to EPA and the appropriate agency in your State.

Important Changes in the Section 313 Requirements for Reporting Year 1988

Reporting requirements for calendar year 1988 reports (due July 1, 1989), differ from 1987 requirements in three respects:

(1) The 1988 threshold for manufacturing or processing a covered toxic chemical is 50,000 pounds (the threshold was 75,000 pounds for reporting year 1987). You must use this threshold in determining whether you are subject to the reporting requirements. (See "Threshold Determinations," p.7, for more information.)

(2) Latitude and logitude information must be included in the report. (See Part I, Section 3.6, p. 13 and Appendix B for more information).

(3) The following chemicals that were covered for the 1987 year are <u>not</u> covered for the 1988 reporting year:

	CAS Number
C.I. Acid Blue 9 disodium salt	2650-18-2
C.I. Acid Blue 9 diammonium salt	3844-45-9

Reporting is not required for these chemicals (see the Final Rule October 7, 1988 (53 FR 23108) for more information).

Supplier Notification Begins in 1989

With the first shipment of product in calendar year 1989, suppliers must provide notice to their customers regarding all mixtures or trade name products that contain listed toxic chemicals. The notice must be attached to the Material Safety Data Sheets (MSDSs). The data in the notice must be used for threshold and release calculations beginning with reports submitted for calendar year 1989 due July 1, 1990. The notification may be used for threshold and release calculations for calendar year 1988, if the notification information is the best available information at the facility. (See "Mixture and Trade Name Products, Supplier Notification," p. 8 for more information.)

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Form R

GENERAL INFORMATION

Submission of EPA Form R, the Toxic Chemical Release Inventory Reporting Form, is required by section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986), Public Law 99-499. The information contained in Form R constitutes a "report," and the submission of a report to the appropriate authorities constitutes "reporting." Reporting is required to provide the public with information on the release of listed toxic chemicals from your facility to the environment during the past year. Facilities must report the quantities of both routine and accidental releases of listed chemicals, as well as the maximum amount of the listed chemical ever on-site during the calendar year and the amount contained in wastes transferred off-site.

A completed Form R must be submitted for each toxic chemical manufactured, processed, or otherwise used at each covered facility as prescribed in the reporting rule in 40 CFR Part 372 (published February 16, 1988 in the Federal Register). These instructions supplement and elaborate on the requirements in the reporting rule. (See Appendix G for a copy of the regulations). Together with the reporting rule, they constitute the reporting requirements. All references in these instructions are to sections in the reporting rule unless otherwise indicated.

HOW TO ASSEMBLE A COMPLETE REPORT

The Toxic Chemical Release Reporting Form, EPA Form R, consists of four parts:

- ❑ Part I, Facility Identification Information (page 1);
- ❑ Part II, Off-Site Locations to Which Toxic Chemicals are Transferred in Wastes (page 2);
- ❑ Part III, Chemical-Specific Information (pages 3 and 4); and
- ❑ Part IV, Supplemental Information (page 5).

Form R is designed so that most of the information required in Part I and all of the information required in Part II can be filled out and then photocopied and attached to each chemical-specific report. Part I may be a photostatic copy as long as it has an original signature on the certification statement and the trade secret designation is appropriate. You have the option to complete Part II for only the off-site locations that apply to the individual chemical cited in the report or you can list all off-site locations that apply to all chemicals being reported and include a photostatic copy of this Part II with each individual report. Part III must be completed separately for each chemical. Part IV provides additional space, if needed, to complete the information required by the preceding sections of the form. Include Part IV in your report, even if it is blank.

A complete report for any listed toxic chemical that is not claimed trade secret consists of the following completed parts:

- ❑ Part I with an original signature on the certification statement (Section 2);
- ❑ Part II;
- ❑ Part III (Section 8 is optional); and
- ❑ Part IV (even if blank).

Staple the pages of each report together. Do not submit supporting documentation or other materials; such data will not be processed with your Form R submission.

TRADE SECRET CLAIMS

For any chemical whose identity is claimed as a trade secret you must submit to EPA two versions of the form as prescribed in 40 CFR Part 350, published July 29, 1988 in the Federal Register (53 FR 28772). Use the order form in this document to obtain a copy of the rule and substantiation form. One version identifies the chemical; the second version does not identify the chemical specifically, but provides instead a generic identity. Only this latter version will be available to the public. For further explanation of the trade-secret provisions, see the instructions below for Part I, Sections 1.1 and 1.2 and Part III, Sections 1.1-1.4.

A complete report for a toxic chemical claimed trade secret includes all of the above items plus the following:

- ❑ A completed Form R report including the chemical identity (staple the pages together);
- ❑ A "sanitized" version of a completed Form R report in which the chemical identity items (Part III, Sections 1.2 and 1.3) have been left blank but in which a generic chemical name has been supplied (Part III, Section 1.4) (staple the pages together);
- ❑ A completed trade secret substantiation form (staple the pages together);
- ❑ A "sanitized" version of the trade secret substantiation form (staple the pages together).

Securely fasten all four reports together.

RECORDKEEPING

You must keep a copy of each report. In addition, you must keep the supporting materials used to develop the information contained in the report. These records must be kept at the facility for a period of three years from the date of the submission and must be readily available for inspection by EPA.

WHEN THE REPORT MUST BE SUBMITTED

The report for any calendar year must be submitted on or before July 1 of the following year (e.g., the report for calendar year 1988, January-December, must be submitted on or before July 1, 1989).

VOLUNTARY REVISION OF A PREVIOUS SUBMISSION

If you are making a voluntary revision to a previous Form R submission, enter "Voluntary Revision" in the space marked "This space for your optional use" on all five pages of the form. If you have obtained the Document Control Number (DCN) of the original submission from EPA, enter that number also in this space. You must include the facility and chemical names on the form exactly as they were reported previously to enable tracking of the original data. If your facility's name has changed since the original submission, you must enter the facility name which appeared in the original submission; also indicate the new facility name in the optional use space on page 1 of Form R only. You must complete the entire form for a voluntary revision and send a copy of the revision to the state. Submissions for the next calendar year are not considered revisions of a previous year's data.

WHERE TO SEND THE REPORT

Form R submissions must be sent to both EPA and the State. Send EPA reports by mail to:

U.S. Environmental Protection Agency
P.O. Box 70266
Washington, D.C. 20024-0266
Attn: Toxic Chemical Release Inventory

Hand-delivered submissions only should be addressed to:

EPA Title III Reporting Center
470 L'Enfant Plaza East
Suite 7103, SW
Washington, DC 20024
Attn: Toxic Chemical Release Inventory

In addition, you must send a copy of the report to the State in which the facility is located ("State" refers to: State of the U.S., the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Northern Mariana Islands, and any other territory or possession over which the U.S. has jurisdiction). Refer to Appendix E (page 62) for the appropriate State address for your facility. If your facility is located on Indian land, send a copy to the Chief Executive Officer of the applicable Indian tribe, unless the tribe has entered into a cooperative agreement with the State. In this case, Form R submissions should be sent to the entity designated in the cooperative agreement to receive the forms.

Copies of the report sent to the State or Indian tribe should be the "sanitized," non-trade-secret version of the report, unless the State specifically requires otherwise. The report submitted to EPA should include both trade-secret and non-trade-secret versions. For additional information, refer to the discussion of trade-secret/confidentiality claims in the instructions for completing Part III, Section 1 of Form R.

HOW TO OBTAIN FORMS AND OTHER INFORMATION

A copy of Form R is included in this booklet. Remove this form and photocopy as many copies of it as you need. Additional copies of EPA Form R and related guidance documents may be obtained from:

Section 313 Document Distribution Center
P.O. Box 12505
Cincinnati, OH 45212

See the request form located before Appendix A (page 47) for more information on available documents. Questions about how to fill out the form may be submitted in writing to:

Emergency Planning and Community Right-to-Know Information Hotline
U.S. Environmental Protection Agency
401 M Street, S.W. (OS-120)
Washington, DC 20460

Alternatively, you may call (800) 535-0202 (in Washington, D.C. and Alaska, (202) 479-2449) from 8:30-7:30 Eastern Time.

EPA Regional Staff may also be able to help you. Refer to Appendix F (page 67) for a list of EPA Regional Contacts.

WHO MUST SUBMIT THIS FORM

Section 313 of Title III requires that reports be filed by owners and operators of facilities that meet all three of the following criteria:

- ❑ The facility has 10 or more full-time employees;
- ❑ The facility is included in Standard Industrial Classification (SIC) Codes 20 through 39; and
- ❑ The facility manufactured (defined to include imported), processed, or otherwise used in the course of a calendar year any listed chemical in quantities greater than the established threshold.

HOW TO DETERMINE IF YOUR FACILITY MUST SUBMIT EPA FORM R

(See Figure 1 for more information.)

DOES YOUR FACILITY HAVE TEN OR MORE FULL-TIME EMPLOYEES?

A "full-time employee," for purposes of section 313 reporting, is defined as 2,000 work hours per year. To determine the number of full-time employees at your facility, add up the hours worked by all employees during the calendar year, including contract employees and sales and support staff working at the facility. Divide the total by 2,000 hours. In other words, if the total number of hours worked by all employees is 20,000 hours or more, your facility meets the employee threshold.

IS YOUR FACILITY'S SIC CODE IN THE 20-39 RANGE?

Table I on page 30 includes a listing of SIC codes 20-39 and the associated 4-digit SIC codes covered by the rule. The first two digits of a 4-digit SIC code define a major business sector, while the last two digits denote a facility's specialty within the major sector. You may already know the SIC code of your business as a result of your having had to develop insurance or other reports. If you are not familiar with the SIC codes that apply to your facility, contact your trade association, Chamber of Commerce, or legal counsel. For a detailed description of 4-digit SIC codes, refer to the "Standard Industrial Classification Manual 1987." Clothbound editions should be available in most major libraries or may be ordered through the National Technical Information Service, 5285 Port Royal Road, Springfield, VA, 22161, (703) 487-4650. The access number for the clothbound manual is PB87-100012, and the price is $30.00. If you are unsure of your SIC code, review your operations to determine if you produce products of the type described in SIC codes 20-39. If the value of those products is greater than any other types of goods and services that you produce at that location, then you meet the SIC code criterion.

Section 313 requires that reports be filed by "facilities," which are defined as "all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person." The SIC code system, however, classifies business "establishments," which are defined as "distinct and separate economic activities [that] are performed at a single physical location."

Establishments, in the SIC code system, are to be treated as separate activities. In many cases, a section 313 "facility" is the same as an "establishment" as defined by the SIC code system.

Multi-establishment Facilities

Your facility may include multiple establishments that have different primary SIC codes. If so, calculate the value of the products produced or shipped from each establishment within the facility and then use the following rule to determine if your facility meets the SIC code criterion:

- ❑ If the total value of the products shipped from or produced at establishments with primary SIC codes between 20 and 39 is greater than 50 percent of the value of the entire facility's products, the facility meets the SIC code criterion.

- ❑ If any one establishment with a primary SIC code between 20 and 39 produces or ships products whose value exceeds the value of products produced or shipped by any other establishment within the facility, the facility also meets the SIC code criterion.

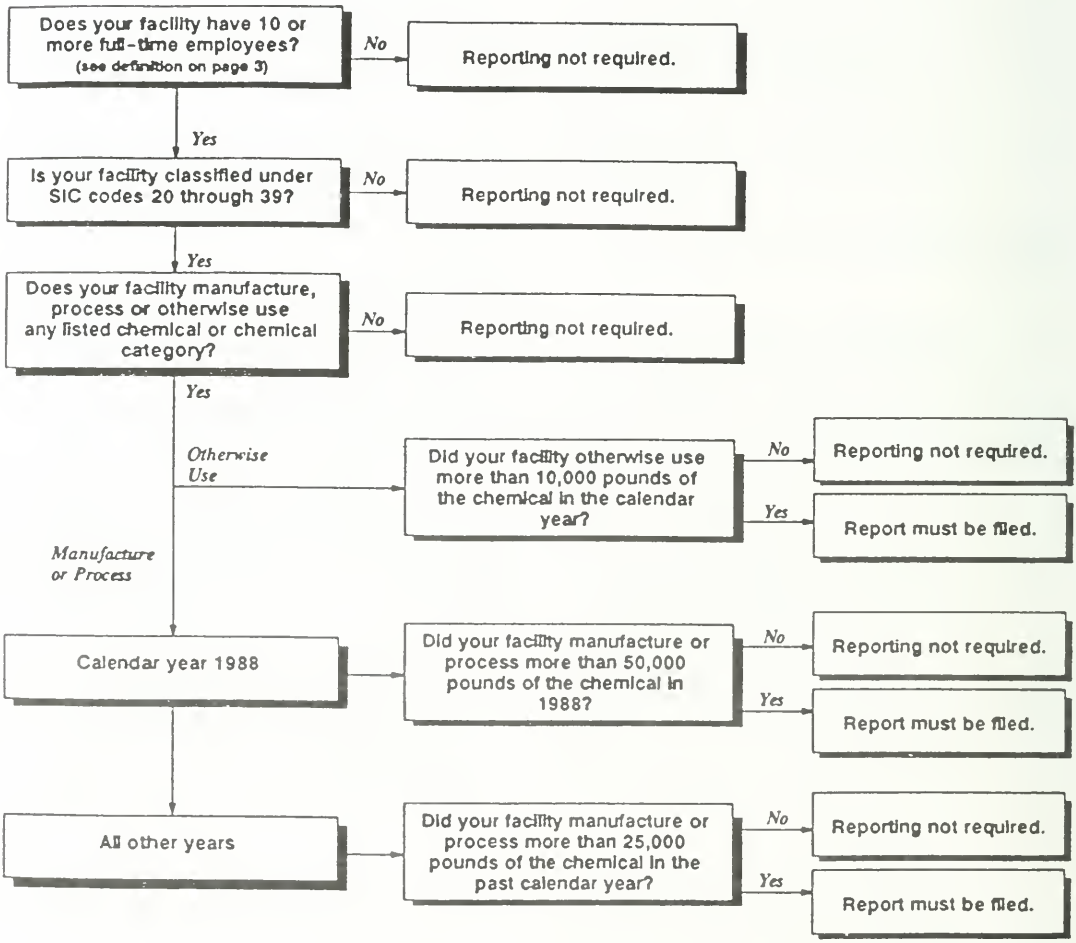
In calculating the value of production attributable to a particular establishment, the facility may adjust the value of production from that establishment by subtracting out the value of products which that establishment obtains from other establishments within the same facility and incorporates into its final production. This procedure eliminates the potential for "double counting" production in situations where establishments are engaged in sequential production activities at a single facility. Examples include:

- ❑ One establishment in a facility mines ore; all of the ore is smelted at a second establishment in the facility. The facility could calculate the value of production for each establishment separately. Alternatively, the facility could determine the value of ore production and subtract it from the value of the output from the smelter operation, which would yield the value of production for the latter establishment.

- ❑ A food processing establishment in a facility processes crops grown at the facility in a separate establishment. The facility could calculate the value of the products of each establishment by determining the total value of production from each establishment. Alternatively, the facility could determine the value of the crops grown at the agricultural establishment. Then, to calculate the contribution of the food processing establishment, the facility would subtract the crop value from the total value of the product shipped from the processing establishment.

Figure 1

Flowchart for Determining Applicability


Does your facility have 10 or more full-time employees? (see definition on page 3)
No
Reporting not required.
Yes
Is your facility classified under SIC codes 20 through 39?
No
Reporting not required.
Yes
Does your facility manufacture, process or otherwise use any listed chemical or chemical category?
No
Reporting not required.
Yes
Otherwise Use
Did your facility otherwise use more than 10,000 pounds of the chemical in the calendar year?
No
Reporting not required.
Yes
Report must be filed.
Manufacture or Process
Calendar year 1988
Did your facility manufacture or process more than 50,000 pounds of the chemical in 1988?
No
Reporting not required.
Yes
Report must be filed.
All other years
Did your facility manufacture or process more than 25,000 pounds of the chemical in the past calendar year?
No
Reporting not required.
Yes
Report must be filed.

A covered multi-establishment facility must make chemical threshold determinations and report all relevant information about releases and waste treatment associated with a listed chemical, even from establishments that are not in SIC codes 20-39. EPA realizes, however, that certain establishments in a multi-establishment facility can be, for all practical purposes, separate business units. Therefore, individual establishments may report separately, provided that the total release and other required information is reported for the whole facility.

Auxiliary Facilities

An auxiliary facility is one that directly supports another establishment's activities (e.g., research and development laboratories, warehouses, storage facilities, and waste-treatment facilities). An auxiliary facility can take on the SIC code of another covered facility if its primary function is to service that other covered facility's operations. Thus, a separate warehouse facility (i.e. one not located within the physical boundries of a covered facility) may become a covered facility because it services a 20-39 facility. Auxiliary facilities that are in SIC codes 20-39 are required to report if they meet the employee criterion and chemical thresholds for manufacture, process, or use. Auxiliary establishments that are part of a multi-establishment facility must be factored into threshold determinations for the facility as a whole.

Facility-Related Exemptions

Listed toxic chemicals that are manufactured, processed, or otherwise used in laboratories at a covered facility under the supervision of a technically qualified individual do not have to be factored into the threshold or release calculations. However, pilot plant scale or specialty chemical production do not qualify for this laboratory exemption.

You are not required to report if you merely own real estate on which a facility covered by this rule is located; that is, you have no other business interest in the operation of that facility (e.g., your company owns an industrial park). The operator of that facility, however, is subject to reporting requirements.

DOES YOUR FACILITY "MANUFACTURE, PROCESS, OR USE" ONE OR MORE OF THE CHEMICALS COVERED BY THE REPORTING RULE?

Table II (page 36 of these instructions) contains the list of individual chemicals and categories of chemicals subject to 1988 calendar year reporting. Some of the chemicals listed in Table II have parenthetic qualifiers listed next to them. A chemical that is listed without a qualifier is subject to reporting in all forms in which it is manufactured, processed, and used.

Fume or dust. Three of the metals on the list (aluminum, vanadium, and zinc) contain the qualifier "fume or dust." This qualifier means that a facility is manufacturing, processing, or using the metal in the form of fume or dust. Fume or dust does not refer to "wet" forms, solutions or slurries, for example, but only dry or anhydrous forms of these metals. As explained on page 6 of these instructions, the term manufacture includes the generation of a chemical as a byproduct or impurity. In such cases, a facility should determine if, for example, it generated more than 50,000 pounds of aluminum fume or dust in 1988 as a result of its activities. If so, the facility must report that it manufactures "aluminum (fume or dust)." Similarly, there may be certain technologies in which one of these metals is processed in the form of a fume or dust to make other chemicals or other products for distribution in commerce. In reporting releases, the facility would only report releases of the fume or dust.

Manufacturing qualifiers. Two of the list entries contain a qualifier relating to manufacture. For isopropyl alcohol, the qualifier reads "manufacturing-strong acid process." For saccharin, the qualifier simply reads "manufacturing." In the case of isopropyl alcohol, the qualifier means that only facilities that manufacture isopropyl alcohol by the strong acid process are required to report. In the case of saccharin, only manufacturers of the chemical are subject to the reporting requirements. A facility that processes or otherwise uses either chemical would not be required to report for those chemicals. In both cases, supplier notification does not apply.

Solutions. Four substances on the list, ammonium nitrate, ammonium sulfate, sodium hydroxide, and sodium sulfate, are qualified by the term "solution," which refers to the physical state of these chemicals. Only facilities that manufacture, process, or otherwise use these chemicals in the form of a solution are required to report. Supplier notification applies only if the chemical is distributed as a solution. (See page 7 for information on calculating threshold and release determinations for solutions.)

Phosphorus (yellow or white). The listing for phosphorus is qualified by the term "yellow or white." This refers to a chemical state of phosphorus meaning that only manufacturing, processing, or use of phosphorus in the yellow or white states triggers reporting. Conversely, manufacturing, processing, or use of "black" or "red" phosphorus do not trigger reporting. Supplier notification also applies only to distribution of yellow or white phosphorus.

Asbestos (friable). The listing for asbestos is qualified by the term "friable," referring to a physical characteristic of asbestos. The term "friable" means crumbled, pulverized, or reducible to a powder with hand pressure. Again, only manufacturing, processing, or use of asbestos in the friable form triggers reporting. Similarly, supplier notification applies only to distribution of friable asbestos.

Definitions of "Manufacture," "Process," and "Otherwise Use"

Manufacture: The term "manufacture" means to produce, prepare, compound or import a listed toxic chemical. Import is defined as causing the chemical to be imported into the customs territory of the United States. If you order a covered toxic chemical (or a mixture containing the chemical) from a foreign supplier, then you have imported the chemical when that shipment arrives at your facility. By ordering the chemical, you have "caused it to be imported," even though you may have used an import brokerage firm as an agent to obtain the chemical. The term manufacture also includes coincidental production of a toxic chemical (e.g., as a byproduct or impurity) as a result of the manufacture, processing, use, or disposal of other chemical substances. In the case of coincidental production of an impurity (i.e., a chemical that remains in the product that is distributed in commerce), the *de minimis* limitation, discussed on page 8, applies. The *de minimis* limitation does not apply to byproducts (e.g., a chemical that is separated from a process stream and further processed or disposed). Certain listed toxic chemicals may be manufactured as a result of wastewater treatment or other treatment processes. For example, neutralization of acid wastewater can result in the coincidental manufacture of sodium sulfate (solution).

EXAMPLE

Your company, a nitric acid manufacturer, uses ammonia in a waste treatment system to neutralize an acidic wastewater stream containing nitric acid. The reaction of the ammonia and nitric acid produces an ammonium nitrate solution. Ammonium nitrate solution is a listed toxic substance, as are nitric acid and ammonia. Your facility otherwise uses ammonia as a reactant and manufactures ammonium nitrate solution as a byproduct. If the ammonium nitrate solution is produced in a quantity that exceeds the threshold (e.g., 50,000 pounds for 1988), releases of ammonium nitrate solution from the facility must be reported. If more than 10,000 pounds of ammonia is added to the wastewater treatment system, then releases of ammonia must also be reported.

Process: The term "process" means the preparation of a listed toxic chemical, after its manufacture, for distribution in commerce. Processing includes preparation of the chemical in the same physical state or chemical form as that received by your facility, or preparation that produces a change in physical state or chemical form. The term also applies to the processing of a component in a mixture or other trade name product (see page 8) that is a listed toxic chemical.

EXAMPLE

The examples below illustrate the categorization of some typical process and manufacture activities.

- ❑ Your company receives toluene, a listed toxic chemical, from another facility, reacts the toluene with air to form benzoic acid, and further reacts the benzoic acid with a cadmium catalyst to form terephthalic acid. Cadmium compounds and terephthalic acid are also listed toxic chemicals. Your company processes toluene, and uses (not processes) the cadmium catalyst (see the definition of "otherwise used" below). Your company manufactures benzoic acid and terephthalic acid. Benzoic acid, however, is not a listed chemical and thus does not trigger reporting requirements.

- ❑ Your company receives a nickel compound (nickel compound is a listed toxic chemical category) as a bulk solid and performs various size-reduction operations (e.g., grinding) before packaging the compound in 50-lb bags. Your company processes the nickel compound.

- ❑ Your company receives a prepared mixture of resin and chopped fiber to be used in the injection molding of plastic products. The resin contains a listed chemical that becomes incorporated into the plastic. Your facility processes the chemical.

Otherwise Use: The term "otherwise use" encompasses any use of a listed chemical at a facility that does not fall under the definitions of "manufacture" or "process." A chemical that is used by a facility is not intentionally incorporated into a product distributed in commerce.

EXAMPLE

When your facility cleans equipment with toluene, you are using toluene. However, if your facility incorporates toluene into a mixture for distribution in commerce, your facility is processing that chemical. Your facility also separates two components of a mixture by dissolving one component in toluene, and subsequently recovers the toluene from the process for reuse or disposal. Your facility uses toluene.

Exemptions

Use Exemptions. Certain uses of listed chemicals are specifically exempted: use as a structural component of the facility; use in routine janitorial or facility grounds maintenance; personal uses by employees or other persons; use of products containing toxic chemicals for the purpose of maintaining motor vehicles operated by the facility; or use of toxic chemicals contained in intake water (used for processing or noncontact cooling) or in intake air (used either as compressed air or for combustion).

Article Exemptions. You do not have to factor into threshold or release determinations quantities of a listed toxic chemical contained in an article if that article is processed or used at your facility. An article is defined as a manufactured item that is formed to a specific shape or design during manufacture, that has end-use functions dependent in whole or in part upon its shape or design during end-use, and that does not release a toxic chemical under normal conditions of the processing or use of that item at the facility.

The release criteria in the article definition is not absolute. Reporting of releases under section 313 may be rounded to the nearest pound. Releases of less than 0.5 pounds per year do not negate the article status of an item that meets the first two criteria in the article definition. If when processing or using an item the estimate of total annual releases of a toxic chemical is less than 0.5 pounds, then the facility may round this estimate to zero. Thus, the article status of the item would be retained because, in effect, the releases are calculated to be zero. Low level releases of a toxic chemical from an item due to normal or natural degradation, corrosion, etc., does not negate the article status.

The article exemption applies to the normal processing or use of an article. It does not apply to the manufacture of an article. Toxic chemicals contained in articles manufactured at a facility must be factored into threshold and release determinations.

The following examples apply the article exemption:

- ❑ Lead that is incorporated into a lead acid battery is processed in order to manufacture the battery, and therefore must be counted toward threshold and release determinations. However, the use of the lead acid battery elsewhere in the facility does not have to be counted. Disposal of the battery after its use does not constitute a "release"; thus, the battery remains an article.

- ❑ Metal rods that are extruded into wire are not articles because their form changes during processing. However, wire that is twisted or bent is an article as long as it remains identifiably wire.

- ❑ If an item used in the facility is fragmented, the item is still an article if those fragments being discarded remain identifiable as the article (e.g., recognizable pieces of a cylinder, pieces of wire). For instance, an 8-foot piece of wire is broken into two 4-foot pieces of wire, without releasing any toxic chemicals. Each 4-foot piece is identifiable as a piece of wire; therefore, the article status for these pieces of wire remain intact.

- ❑ When the processing or use of an item generates fumes, dust, filings, and grindings, the article exemption is not applicable. The chemical(s) in the item must be counted toward the appropriate threshold determination, and the fumes, dust, filings, and grindings reported as releases or wastes. However, if all wastes generated are recycled, whether on- or off-site, the exemption is applicable.

- ❑ Toxic chemicals formed into pellets are not articles because the pellet form is simply a convenient form for further processing of the material. Plastic pellets intended for extrusion are not articles. The same is true for metal ingots.

- ❑ A closed item containing toxic chemicals (e.g., a transformer containing PCBs) that does not release the chemicals during normal use is considered an article if the facility uses the item as intended and the toxic chemicals are not released. If the facility services the transformer by replacing the toxic chemicals, the chemicals must be counted in threshold and release calculations.

DURING A CALENDAR YEAR, DOES YOUR FACILITY MANUFACTURE, PROCESS, OR USE A LISTED CHEMICAL IN QUANTITIES GREATER THAN THE THRESHOLD ESTABLISHED FOR THAT YEAR?

Section 313 sets certain reporting threshold quantities, which vary depending upon the year for which the report is submitted and whether the chemical is manufactured, processed, or otherwise used. You must submit a report if the quantity of a listed chemical that is manufactured or processed over the course of the year at your facility exceeds the following threshold:

- ❑ For calendar year 1987, 75,000 pounds;
- ❑ For calendar year 1988, 50,000 pounds;
- ❑ For calendar year 1989 and subsequent years, 25,000 pounds.

You must submit a report if the quantity of a listed chemical that is otherwise used at your facility exceeds 10,000 pounds during the course of a calendar year.

How to Determine if Thresholds Are Exceeded

To determine whether your facility has exceeded a threshold, compare quantities of listed chemicals that you manufacture, process, or use to the separate respective thresholds for those activities. A worksheet for threshold determinations is included in Appendix C (page 54). Do not add together the quantities of the chemical that are manufactured, processed, and used at your facility, because each of these activities requires a separate threshold determination. For example, if in 1988 you processed 20,000 pounds of a chemical and you used 6,000 pounds of that same chemical, your facility has not met or exceeded any applicable threshold and thus is not required to report for that chemical.

You must submit a report if you exceed any threshold for any listed chemical or chemical category. For example, if your facility processes 22,000 pounds of a listed chemical and also otherwise uses 16,000 pounds of that same chemical, although you do not exceed the process threshold, you do exceed the otherwise used threshold (10,000 pounds) and you therefore must report. However, in preparing your reports, you must consider all non-exempted activities and all releases of that chemical from your facility, not just the releases from the use activity.

Also note that threshold determinations are based upon the actual amounts of a chemical manufactured, processed, or used over the course of the calendar year, which may not equal the amount brought on-site. Thus, stockpiles of listed chemicals intended for a process that is not operated during a calendar year do not count toward threshold determinations.

Threshold determinations of listed toxic chemicals that are recycled or reused at the facility are based only on the amount of the chemical that is added to such recycle/reuse activity during the year, not the total volume in the system. For example, a facility operates a refrigeration unit that contains 15,000 pounds of ammonia at the beginning of the year. The system is charged with 2,000 pounds of ammonia at some point of the year. The facility has therefore "used" only 2,000 pounds of the covered chemical and is not required to report (unless there are other "uses" of ammonia which, when taken together, exceed the reporting threshold). If, however, the whole refrigeration unit had to be recharged with 15,000 pounds of ammonia during the year, the facility would have exceeded the use threshold.

Threshold determinations for metal-containing compounds present a special case. If, for example, you process several different lead compounds, you would base your threshold determination on the total weight of all lead compounds processed. However, if you process both the "parent" metal (lead) as well as one or more lead compounds, you must make threshold determinations for both because they are separately listed toxic chemicals. If you exceed thresholds for both the parent metal and compounds of that same metal, EPA allows you to file one joint report instead of two (e.g., one report for lead compounds, including lead) because the release information you will report in connection with metal compounds will be the total pounds of the parent metal released.

One other case involving metal compounds should be noted. Some metal compounds may contain more than one listed metal. For example, lead chromate is considered both a lead compound and a chromium compound. In such cases, if applicable thresholds are exceeded, you are required to file two separate reports, one for lead compounds and one for chromium compounds.

Mixtures and Trade Name Products

De Minimis Limitation. Toxic chemicals in mixtures and in tradename products must be factored into threshold and release determinations. However, a listed chemical does not have to be considered if it is present in a mixture at a concentration below a specified *de minimis* level. In general, the *de minimis* level is 1.0%, or 0.1% if the chemical meets the OSHA carcinogen standard. See Table II for the *de minimis* value associated with each listed toxic chemical. EPA included this exemption in the rule as a burden reducing step, primarily because facilities are not likely to have information on the presence of a chemical in a mixture or tradename product beyond that available in the product's MSDS. The *de minimis* levels are consistent with OSHA requirements for development of the MSDS.

For threshold determinations, the *de minimis* limitation applies to:

- ❑ A listed toxic chemical in a mixture or tradename product received by the facility.
- ❑ A listed toxic chemical manufactured during a process where the chemical remains in a mixture or product distributed by the facility.

The *de minimis* does not apply to:

- ❑ A chemical in a wastestream resulting from processes in which that chemical is produced, whether as a product, byproduct, or impurity. A threshold determination must be made on the annual quantity of the chemical present in the wastestream, regardless of the concentration. For example, quantities of formaldehyde created as a result of waste treatment must be applied toward the threshold for "manufacture" of this chemical, regardless of the concentration of this chemical in the wastestream.
- ❑ Chemicals in ores, wastes, etc., that undergo intentional beneficiation for purposes of production of that chemical. For example, a company recovers silver by processing waste material containing silver at less than 1% total weight of the material. Although silver is received at less than the *de minimis* concentration, the *de minimis* would not apply because the process concentrates and produces silver as an end product.

In general, when the *de minimis* applies to threshold determinations and the percent in the mixture is below the *de minimis*, then you are not required to report releases associated with the processing or use of the chemical in that mixture. Note that it is possible to meet the threshold for a chemical on a facility-wide basis, but not be required to calculate releases from a particular process because that process involves only mixtures containing the chemical below the *de minimis* level.

Application of the *de minimis* limitation to process streams must also be reviewed. Mixtures containing listed toxic chemicals can be added to a process or generated within a process. In both cases (assuming thresholds are exceeded) a facility is required to consider and report releases from the process up to the point at which the concentration of the chemical falls below the *de minimis* level. For example, a 10% solution of a listed chemical is mixed into a formulated cleaning solution, resulting in a final concentration of less than 1%. Releases such as air emissions from the mix vessel are counted, but releases from the finished formulation are not counted.

Supplier Notification. In 1989, suppliers of facilities in SIC codes 20-39 will be required to develop and distribute a notice if the mixtures or trade name products that they manufacture or process, and subsequently distribute, contain listed toxic chemicals and are distributed to other companies in SIC codes 20-39 or to companies that sell the product to facilities in SIC codes 20-39. If a Material Safety Data Sheet (MSDS) is not required for the mixture or trade name product, the notification must be written. Otherwise, the notice must be incorporated into or attached to the MSDS for that product. The supplier notification requirement begins with the first shipment of a product in 1989 and must accompany the first shipment each year thereafter. In addition, a new or revised notice must be sent if a change occurs in the product which affects the weight of a listed chemical or if it is discovered that a previous notice did not properly identify the chemicals or the percentage by weight.

Note to Suppliers: An item is still considered an article if you can determine that the total releases of any toxic chemical that are likely to occur from the processing or use of that article by your largest volume customer for the product will not equal or exceed 0.5 pounds per year. (See page 7 for further explanation of half-pound rounding for articles.)

If listed toxic chemicals are present above the *de minimis* cut-off level, your supplier must identify the specific components as they appear in Table II and provide their percentage composition by weight in the mixture or product. If your supplier maintains that the identity of a toxic chemical is a trade secret, a generic identity that is structurally descriptive must be supplied on the notice. A maximum concentration level must be provided if your supplier contends that chemical composition information is a trade secret. In either case, you do not need to make a trade secret claim on behalf of your supplier (unless you consider your use of the proprietary mixture a trade secret). Report using the generic name provided in the notification. (See the instructions for Part III, Section 2 on page 16 for more information.) If the listed chemical is present below the *de minimis* level, no notification is required.

If you imported, processed, or otherwise used mixtures or trade name products during calendar year 1988, you are required to use the best information you have available to determine whether the components of a mixture are above the *de minimis* concentration and therefore must be included in threshold and release determinations. If you know that a mixture or trade name product contains a specific toxic chemical, combine the amount of the chemical in the mixture or product with the individual amounts of the same chemical manufactured, processed, or otherwise used at your facility for threshold and release determinations. If you know only the maximum concentration of the toxic chemical present in the mixture or product, then you are required to assume that the toxic chemical is present at that concentration and calculate the weight accordingly. (See Figure 2 for more information.)

Figure 2

Mixture and Trade Name Products – How They Factor Into Your Reports

Any covered toxic chemicals in mixtures or trade name products (M/TNP) must be factored into your threshold and release determinations.

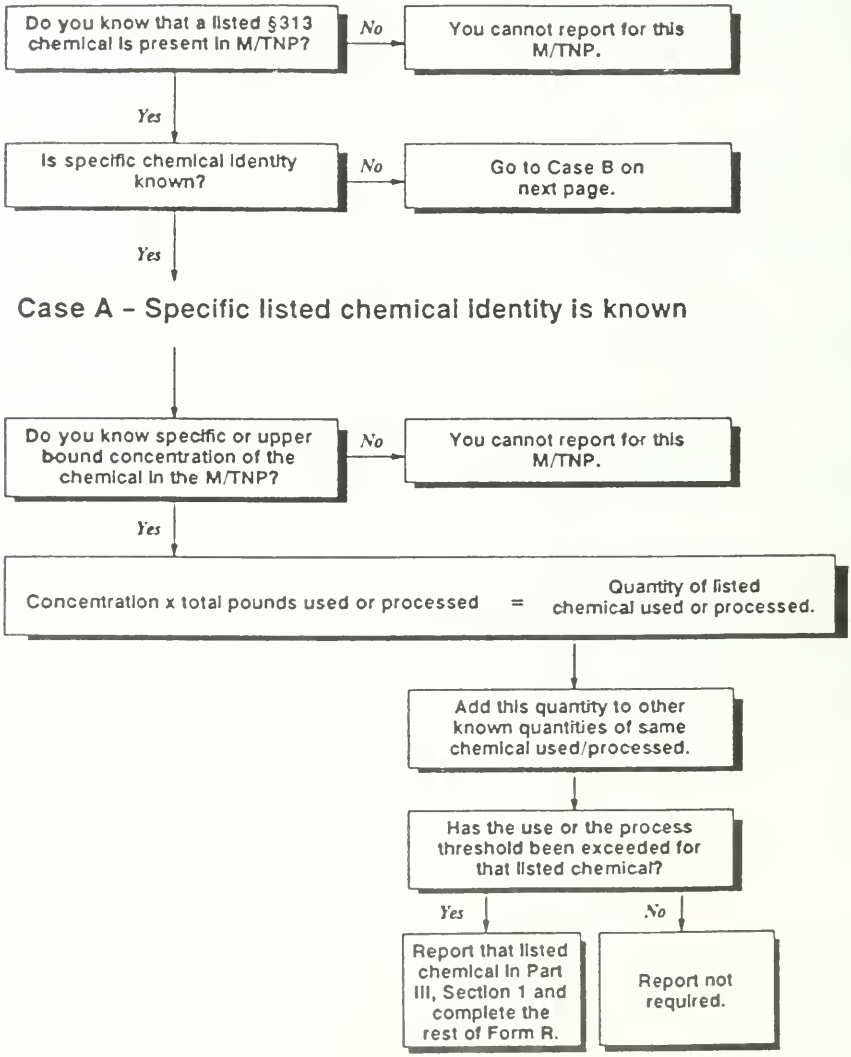
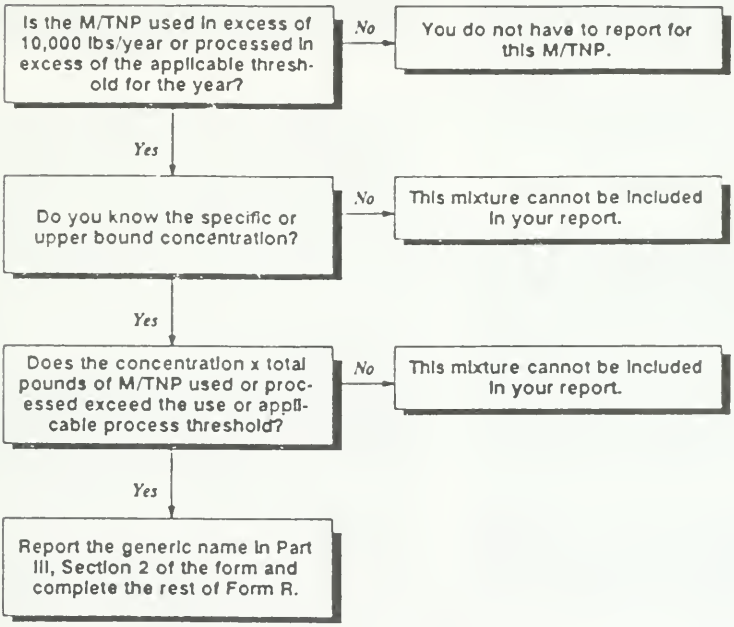

Do you know that a listed §313 chemical is present in M/TNP?
No
You cannot report for this M/TNP.
Yes
Is specific chemical identity known?
No
Go to Case B on next page.
Yes
Case A – Specific listed chemical identity is known
Do you know specific or upper bound concentration of the chemical in the M/TNP?
No
You cannot report for this M/TNP.
Yes
Concentration x total pounds used or processed = Quantity of listed chemical used or processed.
Add this quantity to other known quantities of same chemical used/processed.
Has the use or the process threshold been exceeded for that listed chemical?
Yes
No
Report that listed chemical in Part III, Section 1 and complete the rest of Form R.
Report not required.

Figure 2 (continued)

Case B – Generic identity is known (e.g., your supplier has told you it is §313 chemical but considers the specific identification as trade secret).


Is the M/TNP used in excess of 10,000 lbs/year or processed in excess of the applicable threshold for the year?
No
You do not have to report for this M/TNP.
Yes
Do you know the specific or upper bound concentration?
No
This mixture cannot be included in your report.
Yes
Does the concentration x total pounds of M/TNP used or processed exceed the use or applicable process threshold?
No
This mixture cannot be included in your report.
Yes
Report the generic name in Part III, Section 2 of the form and complete the rest of Form R.

INSTRUCTIONS FOR COMPLETING SPECIFIC SECTIONS OF EPA FORM R

The following are specific instructions for completing each part of EPA Form R. The number designations of the parts and sections of these instructions correspond to those in Form R unless otherwise indicated.

A sample, completed Form R for a hypothetical facility reporting under Title III, section 313, is included as Appendix A (page 47). You may want to refer to this sample as you read through these instructions.

Instructions for Completing All Parts of Form R:

1. Type or print information on the form in the units and format requested.

2. Longitudinal and latitudinal data were optional for the 1987 reports but are required for 1988 and subsequent reporting years. All information on Form R is required except Part III, Section 8.

3. Do not leave items on Form R blank unless specifically directed to do so; if an item does not apply to you, enter "NA," not applicable, in the space provided. If your information does not fill all the spaces provided for a type of information, enter NA, in the next blank space in the sequence.

4. Do not submit an incomplete form. The certification statement (Part I) specifies that the report is complete as submitted. See page 1 of these instructions for the definition of a complete submission.

5. When completing Part IV, supplemental information, or additional pages for Part II of the form, number the additional information sequentially from the prior sections of the form.

6. The box labelled "This space for your optional use" on each page may be used to differentiate one chemical-specific submission from another. You are not required to enter any information in this space. See page 2 for use of this box relating to a voluntary revision of a previous submission.

PART I. FACILITY IDENTIFICATION INFORMATION

1.1 Are you claiming the chemical identity on page 3 trade secret?

Answer this question only after you have completed the rest of the report. The specific identity of the toxic chemical being reported in Part III, Sections 1.2 and 1.3, may be designated as trade secret. If you are making a trade secret claim, mark "yes" and proceed to Section 1.2. Only check "Yes" if it is your manufacturing, processing, or use of the chemical that is a trade secret. (See page 1 of these instructions for specific information on trade secrecy claims.) If you checked "no," proceed to Section 1.3; do not answer Section 1.2.

1.2 If "yes" in 1.1, is this copy sanitized or unsanitized?

Answer this question only after you have completed the rest of the report. Check "sanitized" if this copy of the report is the public version and you have claimed the chemical identity trade secret in Part III, Section 1.1. Otherwise, check "unsanitized."

1.3 Reporting Year

Enter the last two digits of the calendar year to which the reported information applies, not the year in which you are submitting the report. Information for the 1988 reporting year must be submitted on or before July 1, 1989.

2. Certification

The certification statement must be signed by the owner or operator or a senior official with management responsibility for the person (or persons) completing the form. The owner, operator, or official must certify the accuracy and completeness of the information reported on the form by signing and dating the certification statement. Each report must contain an original signature. Print or type in the space provided the name and title of the person who signs the statement. This certification statement applies to all the information supplied on the form and should be signed only after the form has been completed.

3. Facility Identification

3.1 Facility Name and Location

Enter the name of your facility (plant site name or appropriate facility designation), street address, city, county, state, and zip code in the space provided. Do not use a post office box number as the address. The address provided should be the location where the chemicals are manufactured, processed, or otherwise used.

3.2 Full or Partial Facility Indication

A covered facility must report all releases of a listed chemical if it meets a reporting threshold for that chemical. However, if the facility is composed of several distinct establishments, EPA allows these establishments to submit separate reports for the chemical as long as all releases of the chemical from the entire facility are accounted for. Indicate in Section 3.2 whether your report is for the entire covered facility as a whole or for part of a covered facility. Check box a. if the chemical information applies to the entire covered facility. Check box b. if the chemical information applies only to part of a covered facility.

Section 313 requires reports by "facilities," which are defined as "all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person."

The SIC code system defines business "establishments" as "distinct and separate economic activities [that] are performed at a single physical location." Under section 372.30(c) of the reporting rule, you may submit a separate Form R for each establishment, or for groups of establishments, in your covered facility, provided that all releases of the toxic chemicals from the entire covered facility are reported. This allows you the option of reporting separately on the activities involving a toxic chemical at each establishment, or group of establishments (e.g., part of a covered facility), rather than submitting a single Form R for that chemical for the entire facility. However, if an establishment or group of establishments does not manufacture, process, or otherwise use or release a toxic chemical, you do not have to submit a report for that establishment or group of establishments.

3.3 Technical Contact

Enter the name and telephone number (including area code) of a technical representative whom EPA or State officials may contact for clarification of the information reported on Form R. This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility; however, this person must be familiar with the details of the report so that he or she can answer questions about the information provided.

3.4 Public Contact

Enter the name and telephone number (including area code) of a person who can respond to questions from the public about the report. If you choose to designate the same person as both the technical and the public contact, you may enter "Same as Section 3.3" in this space. This contact person does not have to be the same person who prepares the report or signs the certification statement and does not necessarily need to be someone at the location of the reporting facility.

3.5 Standard Industrial Classification (SIC) Code

Enter the appropriate 4-digit primary Standard Industrial Classification (SIC) code for your facility (Table I, page 30, lists the SIC codes within the 20-39 range). If the report covers more than one establishment, enter the primary 4-digit SIC code for each establishment. You are required to enter SIC codes only for those establishments within the facility that fall within SIC codes 20 to 39.

3.6 Latitude and Longitude

Enter the latitudinal and longitudinal coordinates of your facility. Sources of these data include EPA permits (e.g., NPDES permits), county property records, facility blueprints, and site plans. Instructions on how to develop these coordinates can be found in Appendix B (page 52). Enter only numerical data. Do not preface numbers with letters such as N or W to denote the hemisphere.

3.7 Facility Dun and Bradstreet Number

Enter the 9-digit number assigned by Dun and Bradstreet (D&B) for your facility or each establishment within your facility. These numbers code the facility for financial purposes. This number may be available from your facility's treasurer or financial officer. You can also obtain the numbers from your local Dun and Bradstreet office (check the White Pages). If none of your establishments has been assigned a D & B number, enter not applicable, NA, in box a. If only some of your establishments have been assigned Dun and Bradstreet numbers, enter those numbers in Section 3.7.

3.8 EPA Identification Number

The EPA I.D. Number is a 12-digit number assigned to facilities covered by hazardous waste regulations under the Resource Conservation and Recovery Act (RCRA). Facilities not covered by RCRA are not likely to have an assigned I.D. Number. If your facility is not required to have an I.D. Number, enter not applicable, NA, in box a. If your facility has been assigned EPA Identification Numbers, you must enter those numbers in the spaces provided in Section 3.8.

3.9 NPDES Permit Number

Enter the numbers of any permits your facility holds under the National Pollutant Discharge Elimination System (NPDES). This 9-digit permit number is assigned to your facility by EPA or the State under the authority of the Clean Water Act. If your facility does not have a permit, enter not applicable, NA, in box a.

3.10 Receiving Streams or Water Bodies

In Section 3.10 you are to enter the name(s) of the stream(s) or water body(ies) to which your facility directly discharges the chemicals you are reporting. A total of six spaces are provided, lettered a through f. The information you provide relates directly to the discharge quantity information required in Part III, Section 5.3. You can complete Section 3.10 in one of two ways. You can enter only those stream names that relate to the specific chemical that is the subject of the report or, you can enter all stream names that relate to all covered chemicals being reported by the facility. Enter the name of the first receiving stream or surface water body to which the chemical being reported is directly discharged. Report the name of the receiving stream or water body as it appears on the NPDES permit for the facility. If you do not have a permit, enter the name of the off-site stream or water body by which it is publicly known. Be sure to include the receiving stream(s) or water body(ies) that receive stormwater runoff from your facility. Do not enter names of streams to which off-site treatment plants discharge. Also do not list a series of streams through which the chemical flows. Enter not applicable, NA, in 3.10a if you do not discharge any listed toxic chemicals to surface water bodies.

3.11 Underground Injection Well Code (UIC) Identification Number

If your facility has a permit to inject a chemical-containing waste that includes the toxic chemicals into Class 1 deep wells, enter the 12-digit Underground Injection Well Code (UIC) identification number assigned by EPA or by the State under the authority of the Safe Drinking Water Act. If your facility does not hold such a permit(s), enter not applicable, NA, in 3.11a.

4. Parent Company Information

You must provide information on your parent company. For purposes of Form R, a parent company is defined as the highest holder located in the United States that directly owns at least 50 percent of the voting stock of your company. If your facility is owned by a foreign entity, enter not applicable, NA, in this space. Corporate names should be treated as parent company names for companies with multiple sites. For example, the Bestchem Corporation is not owned or controlled by any other corporation. It has several sites throughout the country whose names begin with Bestchem. In this case, Bestchem Corporation would be listed as the "parent" company.

4.1 Name of Parent Company

Enter the name of the corporation or other business entity that is your parent company. If your facility has no parent company, enter not applicable, NA.

4.2 Parent Company's Dun & Bradstreet Number

Enter the Dun and Bradstreet Number for your parent company, if applicable. The number may be obtained from the treasurer or financial officer of the company. If your parent company does not have a Dun and Bradstreet number, enter not applicable, NA.

PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES

In this part of the form you are required to list all off-site locations to which you transfer wastes containing toxic chemicals. Do not list locations to which products containing toxic chemicals are shipped for sale or distribution in commerce or for further use. Also, do not list locations to which wastes containing chemicals are sold or sent for recovery, recycling, or reuse of the toxic chemicals. The information that you enter in this section relates to data you will report in Part III, Section 6. You may complete Part II for only the off-site locations that apply to the specific chemical cited in a particular report or you can list all off-site locations that apply to all chemicals being reported and include a photostatic copy of Part II with each individual report. List only publicly owned treatment works (POTWs) and off-site treatment or disposal facilities.

1. Publicly Owned Treatment Works (POTWs)

Enter the name and address of each POTW to which your facility discharges wastewater containing toxic chemicals for which you are reporting. If you do not discharge wastewater containing the reported toxic chemicals to a POTW, enter not applicable, NA in the facility name line of 1.1.

If you discharge such wastewater to more than two POTWs, use additional copies of Part II. Cross through the printed numbers and write in numbers for these locations in ascending order (e.g., 1.3, 1.4). Check the box at the bottom of the page and indicate the number of additional pages of Part II that are attached.

2. Other Off-Site Locations

Enter in the spaces provided, the name and address of each location (other than POTWs) to which you ship or transfer wastes containing toxic chemicals. If you do not ship or transfer wastes containing toxic chemicals to off-site locations, enter not applicable, NA in the Off-site location name line of 2.1. Also enter the EPA Identification Number (RCRA I.D. Number) for each such location if known to you. This number may be found on the Uniform Hazardous Waste Manifest, which is required by RCRA regulations. Also indicate in the space provided whether the location is owned or controlled by your facility or your parent company. If the facility does not have a RCRA I.D. number, enter not applicable, NA, in this space.

If your facility transfers toxic chemicals to more than six off-site locations, use additional copies of Part II. Cross through the printed numbers and write in numbers for these locations in ascending order (i.e., 2.7, 2.8). Check the box at the bottom of the page and indicate the number of additional pages of Part II that are attached.

EXAMPLE

Your facility is involved in chrome plating of metal parts, which are shipped to an off-site warehouse not owned by your company for distribution. Your facility produces an aqueous plating waste that is treated on-site to recover chromium sludge. The effluent from the on-site treatment plant, which contains chromium compounds (a listed toxic chemical), is piped to a POTW. The chromium sludge is transferred to an off-site, privately owned recovery firm. Chromium is recovered from the sludge by an ion exchange process. Your facility also produces a solid waste containing chromium, which is sent to an off-site permitted landfill owned by your facility.

You must report the locations of the POTW and the permitted landfill in Sections 1 and 2 of Part II of Form R. Do not report the location of the warehouse or give any information about the on-site treatment plant in this section. Indicate that the landfill is under the control of your facility. You are not required to report the location of the off-site, privately owned recovery firm or provide any information concerning off-site recovery.

PART III. CHEMICAL-SPECIFIC INFORMATION

In Part III, you are to identify the toxic chemical being reported. You are to indicate some general uses and activities related to the chemical at your facility. Also in Part III you will enter quantitative data relating to releases of the chemical directly from the facility to air, water, and land. Quantities of the chemical transferred to off-site locations, identified in Part II, are also reported in this part. The final required section provides for reporting of waste treatment information. An additional optional section is included in this part that allows you to report waste minimization information associated with the chemical.

1.1 [Reserved]

1.2 CAS Number

Enter the Chemical Abstracts Service (CAS) registry number in Section 1.2 exactly as it appears in Table II, page 36, for the chemical being reported. CAS numbers are cross-referenced with an alphabetical list of chemical names in Table II of these instructions. If you are reporting one of the chemical categories in Table II (e.g., copper compounds), enter not applicable, NA, in the CAS number space.

If you are making a trade secret claim, you must report the CAS number on your unsanitized Form R and unsanitized substantiation form. Do not report it on your sanitized Form R and sanitized substantiation form.

1.3 Chemical or Chemical Category Name

Enter the name of the chemical or chemical category exactly as it appears in Table II. If the chemical name is followed by a synonym in parentheses, report the chemical by the name that directly follows the CAS number (i.e., not the synonym). If the listed chemical identity is actually a product tradename (e.g., dicofol), the 9th Collective Index name is listed below it in brackets. You may report either name in this case. Do not list the name of a chemical that does not appear in Table II, including individual members of a reportable category. For example, if you use silver nitrate, do not report silver nitrate with its CAS number. Report this chemical as "silver compounds" with no CAS number.

If you are making a trade secret claim, you must report the specific chemical identity on your unsanitized Form R and unsanitized substantiation form. Do not report the chemical name on your sanitized Form R and sanitized substantiation form; report a generic name in Section 1.4 below.

1.4 Generic Chemical Name

Complete Section 1.4 only if you are claiming the specific chemical identity of the toxic chemical as a trade secret and have marked the trade secret block in Part I, Section 1.1 on page 1 of Form R. Enter a generic chemical name that is descriptive of the chemical structure. You must limit the generic name to seventy characters (e.g., numbers, letters, spaces, punctuation) or less. Do not enter mixture names in Section 1.4; see Section 2 below.

In-house plant codes and other substitute names that are not structurally descriptive of the chemical identity being withheld as a trade secret are not acceptable as a generic name. The generic name must appear on both sanitized and unsanitized Form R's, and the name must be the same as that used on your substantiation forms. The Emergency Planning and Community Right-to-Know Information Hotline can provide you with assistance in selecting an appropriate generic name.

2. Mixture Component Identity

Do not complete this section if you have completed Section 1 of Part III. Report the generic name provided to you by your supplier in the section if your supplier is claiming the chemical identity proprietary or trade secret. Do not answer "yes" in Part I, Section 1.1 on page 1 of the form if you complete this section. You do not need to supply substantiation forms.

Enter the generic chemical name in this section only if the following four conditions apply:

1. The amount of the particular mixture or trade name product you "use" exceeds 10,000 pounds or the amount you "process" exceeds the applicable process threshold for the year (i.e., 50,000 lbs. in 1988);

2. You determine that the mixture contains a listed toxic chemical but the only identity you have for that chemical is a generic name;

3. You know either the specific concentration of that toxic chemical component or a maximum concentration figure; and

4. You determine by multiplying the concentration figure by the total annual amount of the whole mixture used (or processed) that you exceed the use or process threshold for that single, generically identified mixture component.

EXAMPLE

Your facility uses 20,000 pounds of a solvent that your supplier has told you contains 80 percent "chlorinated aromatic," their generic name for a chemical subject to reporting under section 313. You therefore know that you have used 16,000 pounds of some listed toxic chemical which exceeds the use threshold. You would file a Form R and enter the name "chlorinated aromatic" in the space provided in Part III, Section 2.

3. Activities and Uses of the Chemical at the Facility

Indicate in this section whether the chemical is manufactured (including imported), processed, or otherwise used at the facility and the general nature of such activities and uses at t facility during the calendar year. Report activities that ta place only at your facility, not activities that take place at oth facilities involving your products. You must check all t blocks in this section that apply. If you are a manufacturer the chemical, you must check a and/or b, and at least one c, d, e, or f. Refer to the definitions of "manufacture "process," and "otherwise use" in the general informatic section of these instructions or section 372.3 of the rule f explanations supplementing those provided below.

3.1 Manufacture the Chemical

Check at least one:

a. *Produce* - A chemical included in this category is produce at the facility.

b. *Import* - A chemical included in this category is importe by the facility into the Customs Territory of the Unite States.

Check at least one:

c. *For on-site use/processing* - A chemical included in this category is produced or imported and then further processed or otherwise used at the same facility. If you check this block you must also check at least one item in 3.2 or 3.3.

d. *For sale/distribution* - A chemical in this category is produced or imported specifically for sale or distribution outside the manufacturing facility.

e. *As a byproduct* - A chemical in this category is produced coincidentally during the production, processing, use, or disposal of another chemical substance or mixture and, following its production, is separated from that other chemical substance or mixture. Chemicals produced and released as a result of waste treatment or disposal are also considered byproducts.

f. *As an impurity* - A chemical in this category is produce coincidentally as a result of the manufacture, processing or use of another chemical but remains primarily in the mixture or product with that other chemical.

3.2 Process the Chemical (incorporative-type activities)

a. *As a reactant* - A natural or synthetic chemical used in chemical reactions for the manufacture of another chemical substance or of a product. Includes, but is not limited to, feedstocks, raw materials, intermediates, and initiators.

b. *As a formulation component* - A chemical added to a product or product mixture prior to further distribution of the product that acts as a performance enhancer during use of the product. Examples of chemicals used in this capacity include, but are not limited to, additives, dyes, reaction diluents, initiators, solvents, inhibitors, emulsifiers, surfactants, lubricants, flame retardants, and rheological modifiers.

c. *As an article component* - A chemical substance that becomes an integral component of an article distributed for industrial, trade, or consumer use. One example is the pigment components of paint applied to a chair that is sold.

d. *Repackaging only* - Processing or preparation of a chemical or product mixture for distribution in commerce in a different form, state, or quantity. This includes, but is not limited to, the transfer of material from a bulk container, such as a tank truck to smaller cans or bottles.

3.3 Otherwise Use the Chemical (non-incorporative-type activities)

a. *As a chemical processing aid* - A chemical that is added to a reaction mixture to aid in the manufacture or synthesis of another chemical substance but is not intended to remain in or become part of the product or product mixture. Examples of such chemicals include, but are not limited to, process solvents, catalysts, inhibitors, initiators, reaction terminators, and solution buffers.

b. *As a manufacturing aid* - A chemical that aids the manufacturing process but does not become part of the resulting product and is not added to the reaction mixture during the manufacture or synthesis of another chemical substance. Examples include, but are not limited to, lubricants, metalworking fluids, coolants, refrigerants, and hydraulic fluids.

c. *Ancillary or other use* - A chemical in this category is used at a facility for purposes other than as a chemical processing aid or manufacturing aid as described above. Includes, but is not limited to, cleaners, degreasers, lubricants, and fuels.

EXAMPLE

In the example below, it is assumed that the threshold quantities for manufacture, process, or otherwise use (50,000 pounds, 50,000 pounds, and 10,000 pounds, respectively, for 1988) have been exceeded and the reporting of listed chemicals is therefore required.

1. Your facility receives toluene and naphthalene (both listed toxic chemicals) from an off-site location. You react the toluene with air to form benzoic acid and react the naphthalene with sulfuric acid, which forms phthalic acid and also produces sulfur dioxide fumes. Your facility processes toluene and naphthalene. Both are used as reactants to produce benzoic acid and phthalic acid, chemicals not on the section 313 list.

   The phthalic acid and benzoic acid are reacted to form a reaction intermediate. The reaction intermediate is dissolved in sulfuric acid, which precipitates terepnthalic acid (TPA). Fifty percent of the TPA is sold as a product and 50 percent is further processed at your facility into polyester fiber. The TPA is treated with ethylene glycol to form an intermediate product, which is condensed to polyester.

   Your company manufactures terephthalic acid, a listed chemical, both for sale/distribution as a commercial product and for on-site use/processing as a feedstock in the polyester process. Because it is a reactant, it is also processed.

   Your facility also uses, as well as processes, sulfuric acid, a listed substance, as it serves as a process solvent to precipitate terephthalic acid.

2. The intermediate product, from which the polyester is prepared, contains dimethyl phthalate, a listed substance. The method of reporting this substance depends on its eventual disposition in the polyester production process:

   (a) If the dimethyl phthalate is removed from the intermediate product before it is reacted to form polyester fiber, then dimethyl phthalate is manufactured at your facility as a byproduct.

   (b) If it is incorporated into the polyester fiber in an unreacted form, then it is manufactured at your facility as an impurity.

   (c) If the dimethyl phthalate participates in the reaction to form polyester fiber without leaving the process, then it is processed as a reactant (intermediate), as are the ethylene glycol and terephthalic acid in the process.

   Sections of Part III that have been completed for scenario 2(c), are illustrated on the following page.

3. Your facility operates a fume scrubber that uses sodium hydroxide solution and recovers the sulfur dioxide fumes from the phthalic acid production process as sodium sulfate solution. Both sodium solutions are listed chemicals. Your facility manufactures sodium sulfate as a byproduct and otherwise uses sodium hydroxide.

4. Your facility applies C.I. disperse yellow 3, a listed chemical, to the finished polyester fiber as a dye, which is incorporated into the polyester fiber product and remains in the product after it is sold. Your facility processes the C.I disperse yellow 3 as an article component.

(Important: Type or print; read instructions before completing form.)

EPA

EPA FORM R

PART III. CHEMICAL-SPECIFIC INFORMATION

(This space for your optional use.)

1. CHEMICAL IDENTITY (Do not complete this section if you complete Section 2.)

1.1 [Reserved]

1.2 CAS Number (Enter the number exactly as it appears on the 313 list. Enter NA if reporting a chemical category.)
131-11-3

1.3 Chemical or Chemical Category Name (Enter the name exactly as it appears on the 313 list.)
Dimethyl Phthalate

1.4 Generic Chemical Name (Complete only if Part I, Section 1.1 is checked "Yes." Generic name must be structurally descriptive.)

2. MIXTURE COMPONENT IDENTITY (Do not complete this section if you complete Section 1.)

Generic Chemical Name Provided by Supplier (Limit the name to a maximum of 70 characters (e.g. numbers, letters, spaces, punctuation...))

3. ACTIVITIES AND USES OF THE CHEMICAL AT THE FACILITY (Check all that apply.)

3.1 Manufacture the chemical:
a. [X] Produce
b. [ ] Import
If produce or import:
c. [X] For on-site use/processing
d. [ ] For sale/distribution
e. [ ] As a byproduct
f. [ ] As an impurity

3.2 Process the chemical:
a. [X] As a reactant
b. [ ] As a formulation component
c. [ ] As an article component
d. [ ] Repackaging only

3.3 Otherwise use the chemical:
a. [ ] As a chemical processing aid
b. [ ] As a manufacturing aid
c. [ ] Ancillary or other use

4. Maximum Amount of the Chemical On-Site at Any Time Dunng the Calendar Year

Insert the appropnate code (see below) that indicates the maximum quantity of the chemical (e.g., in storage tanks, process vessels, on-site shipping containers) at your facility at any time dunng the calendar year. If the chemical was present at several locations within your facility, use the maximum total amount present at the entire facility at any one time.

	Weight Range in Pounds	
Range Code	From...	To....
01	0	99
02	100	999
03	1,000	9,999
04	10,000	99,999
05	100,000	999,999
06	1,000,000	9,999,999
07	10,000,000	49,999,999
08	50,000,000	99,999,999
09	100,000,000	499,999,999
10	500,000,000	999,999,999
11	1 billion	more than 1 billion

If the toxic chemical present at your facility was part of a mixture or trade name product, determine the maximum quantity of the chemical present at the facility by calculating the weight of the toxic chemical only. Do not include the weight of the entire mixture or trade name product. See section 372.30(b) of the reporting rule for further information on how to calculate the weight of the chemical in the mixture or trade name product. For chemical categories (e.g., copper compounds), include all chemicals in the category when calculating the weight of the toxic chemical.

5. Releases of the Chemical to the Environment On-Site

In Section 5, you must account for the total aggregate releases of the toxic chemical to the environment on-site from your facility for the calendar year. Releases to the environment include emissions to the air, discharges to surface waters, and releases to land and underground injection wells. If you have no releases to a particular media (e.g., stack air), enter not applicable, NA; do not leave blank. Check the box on the last line of this section if you use Part IV, the supplemental information sheet.

You are not required to count as a release quantities of a toxic chemical that are lost due to natural weathering or corrosion, normal/natural degradation of a product, or normal migration of a chemical from a product. For example, amounts of a covered toxic chemical that migrate from plastic products in storage do not have to be counted in estimates of releases of that chemical from the facility. Also, amounts of listed metal compounds (e.g., copper compounds) that are lost due to normal corrosion of process equipment do not have to be considered as releases of copper compounds from the facility.

All air releases of the chemical from the facility must be accounted for. Do not enter information on individual emission points or releases. Enter only the total release. If there is doubt about whether an air release is a point or non-point release, you must identify the release as one or the other rather than leave items 5.1 and 5.2 blank. Instructions for columns A, B, and C follow the discussions of Sections 5.1 through 5.5.

5.1 Fugitive or Non-Point Air Emissions

These are releases to the air that are not released through stacks, vents, ducts, pipes, or any other confined air stream. You must include (1) fugitive equipment leaks from valves, pump seals, flanges, compressors, sampling connections, open-ended lines, etc.; (2) evaporative losses from surface impoundments; (3) releases from building ventilation systems; and (4) any other fugitive or non-point air emissions.

5.2 Stack or Point Air Emissions

These are releases to the air that occur through stacks, vents, ducts, pipes, or other confined air streams. You must include storage tank emissions. Air releases from air pollution control equipment would generally fall in this category.

5.3 Discharges to Receiving Streams or Water Bodies

Enter the applicable letter code for the receiving stream or water body from Section 3.10 of Part I of the form. Also, enter the total annual amount of the chemical released from all discharge points at the facility to each receiving stream or water body. Include process outfalls such as pipes and open trenches, releases from on-site wastewater treatment systems, and the contribution from stormwater runoff, if applicable (see instructions for column C below). Do not include discharges to a POTW or other off-site wastewater treatment facilities in this section. These off-site transfers must be reported in Part III, Section 6 of the form.

5.4 Underground Injection

Enter the total annual amount of the chemical that was injected into all wells, including Class I wells, at the facility.

5.5 Releases to Land

Report quantities of the chemical that were landfilled, treated or applied in farming, impounded, or otherwise disposed of at the facility. Do not report land disposal at off-site locations in this section.

For the purpose of this form, a surface impoundment is considered "final disposal." Quantities of the chemical released to surface impoundments that are used merely as part of a wastewater treatment process generally must not be reported in this section of the form. However, if the impoundment accumulates sludges containing the chemical, you must include an estimate in this section unless the sludges are removed and otherwise disposed of (in which case they should be reported under the appropriate section of the form). For the purposes of this reporting, storage tanks are not considered to be a type of disposal and are not to be reported in this section of the form.

A. Total Release

Only on-site releases of the toxic chemical to the environment for the calendar year are to be reported in this section of the form. The total releases from your facility do not include transfers or shipments of the chemical from your facility for sale or distribution in commerce or of wastes to other facilities for treatment or disposal (see Part III, Section 6). Both routine releases, such as fugitive air emissions, and accidental or non-routine releases, such as chemical spills, must be included in your estimate of the quantity released.

Total annual releases or off-site transfers of a toxic chemical from the facility of less than 1 pound may be reported in one of several ways. The fractional figure may be entered in column A.2. However, EPA encourages rounding to the nearest pound. For example, if the estimate is 0.5 pounds or greater, you should either check the range bracket of "1-499" in column A.1 or enter "1" in column A.2. Do not use both columns A.1 and A.2. If the release is less than 0.5 pounds, you may round to zero and check the "0" bracket in A.1. Note that releases of less than 0.5 pounds from the processing or use of an article does not negate the article status of that item. Thus, if the only releases you have are from an article and such releases are less than 0.5 pounds per year, you are not required to submit a report for that chemical.

A.1 Reporting Ranges

For reports submitted for calendar years 1987, 1988 and 1989 only, you may take advantage of range reporting for releases to an environmental medium that are less than 1,000 pounds for the year. If you choose this option, mark one of the three boxes, 0, 1-499, or 500-999, that corresponds to releases of the chemical to the appropriate environmental medium (i.e., any line item). You are not required, however, to use these range check boxes; you have the option of providing a specific figure in column A.2, as described below. However, do not mark a range and also enter a specific estimate in A.2.

For releases to any medium that amount to 1,000 pounds or more for the year, you must provide an estimate in pounds per year in column A.2. Any estimate provided in column A.2 is required to be accurate to no more than two significant digits.

A.2 Enter Estimate

If you do not use the range reporting option, provide your estimates of releases in pounds for the year in column A.2. This estimate is required to be rounded to no more than two significant digits.

Calculating Releases - To provide the release information required in both columns A.1 and A.2 in this section of the form, you must use all readily available data (including relevant monitoring data and emissions measurements) collected at your facility pursuant to other provisions of law or as part of routine plant operations, to the extent you have such data for the toxic chemical.

When relevant monitoring data or emission measurements are not readily available, reasonable estimates of the amounts released must be made using published emission factors, material balance calculations, or engineering calculations. You may not use emission factors or calculations to estimate releases if more accurate data are available.

No additional monitoring or measurement of the quantities or concentrations of any toxic chemical released into the environment, or of the frequency of such releases, is required for the purpose of completing this form, beyond that which is required under other provisions of law or regulation or as part of routine plant operations.

You must estimate as accurately as possible the quantity in pounds of the chemical or chemical category that is released annually to each environmental medium. Include only the quantity of the toxic chemical component of the waste stream in this estimate. If the toxic chemical present at your facility was part of a mixture or trade name product, calculate only the releases of the chemical. Do not report releases of the other components of the mixture or trade name product. If you are

only able to estimate the releases of the mixture or trade name product as a whole, you must assume that the release of the toxic chemical is proportional to its concentration in the mixture or trade name product. See section 372.30(b) of the reporting rule (Appendix G) for further information on how to calculate the concentration and weight in the mixture or trade name product.

If you are reporting a chemical category listed in Table II of these instructions, rather than a specific chemical, you must combine the release data for all chemicals in the listed chemical category (e.g., all glycol ethers or all chlorophenols) and report the aggregate amount for that chemical category. Do not report releases of each individual chemical in that category separately. For example, if your facility releases 3,000 pounds per year of 2-chlorophenol, 4,000 pounds per year of 3-chlorophenol, and 4,000 pounds per year of 4-chlorophenol, you should report that your facility releases 11,000 pounds per year of chlorophenols.

For listed chemicals with the qualifier "solution," such as sodium sulfate, at concentrations of 1 percent (or 0.1 percent in the case of a carcinogen) or greater, the chemical concentrations must be factored into threshold and release calculations because threshold and release amounts relate to the amount of chemical in solution, not the amount of solution.

For metal compound categories (e.g., chromium compounds), report releases of only the parent metal. For example, a user of various inorganic chromium salts would report the total chromium released in each waste type regardless of the chemical form (e.g., as the original salts, chromium ion, oxide) and exclude any contribution to mass made by other species in the molecule.

EXAMPLE

Your facility disposes of 14,000 pounds of lead chromate ($PbCrO_4 PbO$) and 15,000 pounds of zinc dichromate ($ZnCr_2O_7 3H_2O$) in an on-site landfill and transfers 16,000 pounds of lead selenate ($PbSeO_4$) to an off-site land disposal facility. You would therefore be submitting four separate reports on the following: lead compounds, zinc compounds, selenium compounds, and chromium compounds. However, the quantities you would be reporting would be the pounds of "parent" metal being released or transferred off-site. All quantities are based on mass balance calculations (See Section 5.B for information on Basis of Estimate and Section 6.C for treatment/disposal codes and information on transfers of chemical wastes). You would calculate releases of lead, zinc, chromium, and selenium by first determining the percentage by weight of these metals in the materials you use as follows:

Lead Chromate ($PbCrO_4 PbO$) -
Molecular weight = 546.37
Lead 2 Pb -
Molecular weight = 207.2 x 2 = 414.4
Chromate 1 Cr -
Molecular weight = 51.996

Lead chromate is therefore (% by weight)
(414.4/546.37) = 75.85% lead and (51.996/546.37) = 9.52% chromium

You can then calculate the total amount of the metals that you must report.

14,000 pounds of lead chromate contains:
14,000 x 0.7585 = 10,619 lbs of lead
14,000 x 0.0952 = 1,332.8 lbs of chromium

Similarly, zinc dichromate is (65.38/335.4) = 19.49% zinc and (51.996 x 2/335.4) = 31.01% chromium, and lead selenate is (207.2/350.17) = 59.17% lead and (78.96/350.17) = 22.55% selenium.

The total pounds of lead, chromium, zinc, and selenium released or transferred from your facility are as follows:

Lead

Release:
0.7585 x 14,000 = 10,619.0 lbs from lead chromate (round to 11,000 lbs)

Transfer:
0.5917 x 16,000 = 9,467.2 lbs from lead selenate (round to 9,500 lbs)

As an example, the releases and transfers of lead should be reported as illustrated on the next page.

Chromium

Release:
0.0952 x 14,000 = 1,332.8 lbs from lead chromate (round to 1,300 lbs)

Release:
0.3101 x 15,000 = 4,651.5 lbs from zinc dichromate (round to 4,700 lbs)

Zinc

Release:
0.1949 x 15,000 = 2,923.5 lbs from zinc dichromate (round to 2,900 lbs)

Selenium

Transfer:
0.2255 x 16,000 = 3,608.0 lbs of selenium from lead selenate (round to 3,600 lbs)

B. Basis of Estimate

For each release estimate, you are required to indicate the principal method by which the quantity was derived. Enter a letter code from below that identifies the method that applies to the largest portion of the total estimated quantity. EPA requires that decimal fractions be rounded to no more than two significant digits when reporting releases.

For example, if 40 percent of stack emissions of the reported substance were derived using monitoring data, 30 percent by mass balance, and 30 percent by emission factors, you would enter the code letter "M" for monitoring. The codes are as follows:

M - Estimate is based on monitoring data or measurements for the toxic chemical as released to the environment and/or off-site facility.

C - Estimate is based on mass balance calculations, such as calculation of the amount of the toxic chemical in streams entering and leaving process equipment.

E - Estimate is based on published emission factors, such as those relating release quantity to through-put or equipment type (e.g., air emission factors).

O - Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a waste stream, even if the composition of the stream before treatment was fully characterized by monitoring data.

If the monitoring data, mass balance, or emission factor used to estimate the release is not specific to the toxic chemical being reported, the form should identify the estimate as based on engineering calculations or judgment.

If a mass balance calculation yields the flow rate of a waste stream, but the quantity of reported chemical in the waste stream is based on solubility data, report "O" because "engineering calculations" were used as the basis of estimate of the quantity of the chemical in the waste stream.

If the concentration of the chemical in the waste stream was measured by monitoring equipment and the flow rate of the waste stream was determined by mass balance, then the primary basis of estimate is "monitoring" (M) even though a mass balance calculation also contributed to the estimate. "Monitoring" should be indicated because monitoring data was used to estimate the concentration of the waste stream.

Mass balance (C) should only be indicated if it is directly used to calculate the mass (weight) of chemical released. Monitoring data should be indicated as the basis of estimate only if the chemical concentration is measured in the waste stream being released into the environment as opposed to measured in other process streams containing the chemical.

C. Percent From Stormwater

This column relates only to Section 5.3 - Discharges to receiving streams or water bodies. If your facility has monitoring data on the amount of the chemical in stormwater runoff (including unchanneled runoff), you must include that quantity of the chemical in your water release in column A and indicate the percentage of the total quantity (by weight) of the chemical contributed by stormwater in column C (5.3c).

If your facility has monitoring data on the chemical and an estimate of flow rate, you must use this data to determine the percent stormwater.

If you have monitored stormwater but did not detect the chemical, enter zero (0) in column C. If your facility has no stormwater monitoring data for the chemical, enter not applicable, NA, in this space on the form.

1. CHEMICAL IDENTITY (Do not complete this section if you complete Section 2.)	
1.1	[Reserved]
1.2	CAS Number (Enter the number exactly as it appears on the 313 list. Enter NA if reporting a chemical category.) NA
1.3	Chemical or Chemical Category Name (Enter the name exactly as it appears on the 313 list.) Lead Compounds
1.4	Generic Chemical Name (Complete only if Part I, Section 1.1 is checked "Yes." Generic name must be structurally descriptive.)

2.	MIXTURE COMPONENT IDENTITY (Do not complete this section if you complete Section 1.)
	Generic Chemical Name Provided by Supplier (Limit the name to a maximum of 70 characters (e.g., numbers, letters, spaces, punctuation).)

viscosity or density of the waste is considerably different from that of process wastewater.

B. Treatment Method

Enter the appropriate code from one of the lists below for each treatment method used on a waste stream containing the toxic chemical, regardless of whether the treatment method actually removes the specific chemical being reported. Treatment methods must be reported for each type of waste being treated (i.e., gaseous wastes, aqueous wastes, liquid non-aqueous wastes, and solids).

Waste streams containing the chemical may have a single source or may be aggregates of many sources. For example, process water from several pieces of equipment at your facility may be combined prior to treatment. Report treatment methods that apply to the aggregate waste stream, as well as treatment methods that apply to individual waste streams. If your facility treats various wastewater streams containing the chemical in different ways, the different treatment methods must each be listed separately.

Your facility may have several pieces of equipment performing a similar service and for such equipment you may combine the reporting on a single line. It is not necessary to enter four lines of data to cover four scrubber units, for example, if all four are treating wastes of similar character (e.g., sulfuric acid mist emissions), have similar influent concentrations, and have similar removal efficiencies. If, however, any of these parameters differ from one unit to the next, each scrubber must be listed separately.

Air Emissions Treatment

A01 Flare
A02 Condenser
A03 Scrubber
A04 Absorber
A05 Electrostatic Precipitator
A06 Mechanical Separation
A07 Other Air Emission Treatment

Biological Treatment

B11 Biological Treatment -- Aerobic
B21 Biological Treatment -- Anaerobic
B31 Biological Treatment -- Facultative
B99 Biological Treatment -- Other

Chemical Treatment

C01 Chemical Precipitation -- Lime or Sodium Hydroxide
C02 Chemical Precipitation -- Sulfide
C09 Chemical Precipitation -- Other
C11 Neutralization
C21 Chromium Reduction
C31 Complexed Metals Treatment (other than pH Adjustment)
C41 Cyanide Oxidation -- Alkaline Chlorination
C42 Cyanide Oxidation -- Electrochemical
C43 Cyanide Oxidation -- Other
C44 General Oxidation (including Disinfection) -- Chlorination
C45 General Oxidation (including Disinfection) -- Ozonation
C46 General Oxidation (including Disinfection) -- Other
C99 Other Chemical Treatment

Incineration/Thermal Treatment

F01 Liquid Injection
F11 Rotary Kiln with Liquid Injection Unit
F19 Other Rotary Kiln
F31 Two Stage
F41 Fixed Hearth
F42 Multiple Hearth
F51 Fluidized Bed
F61 Infra-Red
F71 Fume/Vapor
F81 Pyrolytic Destructor
F82 Wet Air Oxidation
F83 Thermal Drying/Dewatering
F99 Other Incineration/Thermal Treatment

Physical Treatment

P01 Equalization
P09 Other Blending
P11 Settling/Clarification
P12 Filtration
P13 Sludge Dewatering (non-thermal)
P14 Air Flotation
P15 Oil Skimming
P16 Emulsion Breaking -- Thermal
P17 Emulsion Breaking -- Chemical
P18 Emulsion Breaking -- Other
P19 Other Liquid Phase Separation
P21 Adsorption -- Carbon
P22 Adsorption -- Ion Exchange (other than for recovery/reuse)
P23 Adsorption -- Resin
P29 Adsorption -- Other
P31 Reverse Osmosis (other than for recovery/reuse)
P41 Stripping -- Air
P42 Stripping -- Steam
P49 Stripping -- Other
P51 Acid Leaching (other than for recovery/reuse)
P61 Solvent Extraction (other than recovery/reuse)
P99 Other Physical Treatment

Recovery/Reuse

R01 Reuse as Fuel -- Industrial Kiln
R02 Reuse as Fuel -- Industrial Furnace
R03 Reuse as Fuel -- Boiler
R04 Reuse as Fuel -- Fuel Blending
R09 Reuse as Fuel -- Other
R11 Solvents/Organics Recovery -- Batch Still Distillation
R12 Solvents/Organics Recovery -- Thin-Film Evaporation
R13 Solvents/Organics Recovery -- Fractionation
R14 Solvents/Organics Recovery -- Solvent Extraction
R19 Solvents/Organics Recovery -- Other
R21 Metals Recovery -- Electrolytic
R22 Metals Recovery -- Ion Exchange
R23 Metals Recovery -- Acid Leaching
R24 Metals Recovery -- Reverse Osmosis
R26 Metals Recovery -- Solvent Extraction
R29 Metals Recovery -- Other
R99 Other Reuse or Recovery

Solidification/Stabilization

G01 Cement Processes (including Silicates)
G09 Other Pozzolonic Processes (including Silicates)
G11 Asphaltic Processes
G21 Thermoplastic Techniques
G99 Other Solidification Processes

C. Range of Influent Concentration

The form requires an indication of the range of concentration of the toxic chemical in the waste stream (i.e., the influent) as it typically enters the treatment equipment. Enter in the space provided one of the following code numbers corresponding to the concentration of the chemical in the influent:

1 = Greater than 1 percent
2 = 100 parts per million (0.01 percent) to 1 percent (10,000 parts per million)
3 = 1 part per million to 100 parts per million
4 = 1 part per billion to 1 part per million
5 = Less than 1 part per billion

[Note: Parts per million (ppm) is milligrams/kilogram (mass/mass) for solids and liquids; cubic centimeters/ cubic meter (volume/volume) for gases; milligrams/liter for solutions or dispersions of the chemical in water; and milligrams of chemical/kilogram of air for particulates in air. If you have particulate concentrations (at standard temperature and pressure) as grains/cubic foot of air, multiply by 1766.6 to convert to parts per million; if in milligrams/cubic meter, multiply by 0.773 to obtain parts per million. Factors are for standard conditions of 0°C (32°F) and 760 mmHg atmospheric pressure.]

D. Sequential Treatment?

The blocks in this column may be used in the following case:

- ❑ Individual treatment steps are used in a series to treat the chemical, but
- ❑ You have no data on the individual efficiencies of each step, but you are able to estimate the overall efficiency of the treatment sequence.

If this is the case, then you may do the following:

- ❑ List the appropriate codes for the treatment steps in order (column B) and then put an "X" in the boxes in column D for all these sequential treatment steps.
- ❑ Enter the appropriate code for the influent concentration (column C) for only the first treatment step in the sequence. Leave this item blank for the rest of the treatment steps in the sequence only. Enter NA in column E for the efficiency of preceding steps in the sequence.
- ❑ Provide the treatment efficiency (column E) for the entire sequence by entering that value in connection with the last treatment step in the sequence only. Enter NA in column E for the efficiency of preceding steps in the sequence.

An example of how to use the sequential treatment option is provided in Appendix A (page 47).

E. Treatment Efficiency Estimate

In the space provided, enter the number indicating the percentage of the toxic chemical removed from the waste stream through destruction, biological degradation, chemical conversion, or physical removal. The treatment efficiency (expressed as percent removal) represents the mass or weight percentage of chemical destroyed or removed, not merely changes in volume or concentration of the chemical or the waste stream. The efficiency refers only to the percent conversion or removal of the listed toxic chemical from the waste stream, not the percent conversion or removal of other waste stream constituents (alone or together with the listed chemical), and not the general efficiency of the method for any waste stream. For some treatments, the percent removal will represent removal by several mechanisms, as in secondary wastewater treatment, where a chemical may evaporate, be biodegraded, or be physically removed in the sludge.

Percent removal must be calculated as follows:

$$\frac{(I - E)}{I} \times 100$$

where I = mass of the chemical in the influent waste stream and E = mass of the chemical in the effluent waste stream.

❑ Mark yes or no in column F only in connection with the final step in the sequence. Do not mark in this column for proceeding steps in the sequence.

Calculate the mass or weight of chemical in the waste stream being treated by multiplying the concentration (by weight) of the chemical in the waste stream by the flow rate. In most cases, the percent removal compares the treated effluent to the influent for the particular type of waste stream. However, for some treatment methods, such as incineration or solidification of wastewater, the percent removal of the chemical from the influent waste stream would be reported as 100 percent because the waste stream does not exist in a comparable form after treatment. Some of the treatments (e.g., fuel blending and evaporation) do not destroy, chemically convert, or physically remove the chemical from its waste stream. For these treatment methods, an efficiency of zero must be reported.

For metal compounds, the calculation of the reportable concentration and treatment efficiency is based on the weight of the parent metal, not on the weight of the metal compounds. Metals are not destroyed, only physically removed or chemically converted from one form into another. The treatment efficiency reported represents only physical removal of the parent metal from the waste stream, not the percent chemical conversion of the metal compound. If a listed treatment method converts but does not remove a metal (e.g., chromium reduction), the method must be reported, but the treatment efficiency must be reported as zero.

All data available at your facility must be utilized to calculate treatment efficiency and influent chemical concentration. You are not required to collect any new data for the purposes of this reporting requirement. If data are lacking, estimates must be made using best engineering judgment or other methods.

F. Based on Operating Data?

This column requires you to indicate "Yes" or "No" to whether the treatment efficiency estimate is based on actual operating data. For example, you would check "Yes" if the estimate is based on monitoring of influent and effluent wastes under typical operating conditions. For sequential treatment, do not indicate "Yes" or "No" in column F for a treatment step unless you have provided a treatment estimate in column E.

If the efficiency estimate is based on published data for similar processes or on equipment supplier's literature, or if you otherwise estimated either the influent or effluent waste comparison or the flow rate, check "No."

EXAMPLE

Your facility produces several different waste streams treated on-site and transferred to off-site facilities. You have previously indicated, in Part II, Section 2.1, of Form R, the location of the off-site facilities and the quantity of each reported chemical transferred to off-site facilities in Part III, Section 6.2.1, of the form, using a separate form for each chemical. One waste stream generated by your facility is aqueous waste containing lead chromate, zinc dichromate, and lead selenate as discussed in a previous example in these instructions. In this example, the waste is transferred to off-site facilities after on-site wastewater treatment. The on-site wastewater treatment plant precipitates metal sludges. The wastewater is first treated with sulfuric acid and sodium disulfate to reduce the hexavalent chromate to trivalent chromium and then treated with lime to raise the pH. This precipitates chromium hydroxide, zinc hydroxide, and lead hydroxide, but does not remove the selenium. The selenium is removed from the wastewater by an ionic exchange system. The chromium, zinc, and lead hydroxide sludge (solid) waste is transferred to an off-site land disposal facility and the selenium-containing ion exchange resin is transferred to an off-site facility for metal recovery (off-site recovery should not be reported). The treated wastewater is sent to a POTW after neutralization. You would indicate the following treatment methods for the on-site treatment of each of the lead, zinc, chromium, and selenium compounds:

C21	-	Chromium Reduction
C01	-	Chemical Precipitation -- Lime or Sodium Hydroxide
R22	-	Metals Recovery -- Ion Exchange
C11	-	Neutralization

All sequential treatment steps must be indicated for all the metal compound categories reported even if the treatment method does not affect the particular metal. For example, ionic exchange must be reported as a treatment method for lead, zinc, chromium, and selenium compounds, even though the method affects only the selenium compound.

You would calculate the percent removal of chromium, lead, zinc, and selenium, by subtracting the amount of each metal in the wastewater discharge from the amount of each metal in the wastewater before treatment, and then dividing by the amount of each metal in the wastewater before treatment.

You would indicate a discharge to a POTW in Part III, Section 6.1.1 and the location of the POTW in Part II, Section 1.1. You would also indicate the release of the metal sludge to an off-site land disposal facility in Part III, Section 6.2.1.

8. Optional Information on Waste Minimization

Information provided in Part III, Section 8, of Form R is optional. In this section, you may identify waste minimization efforts relating to the reported toxic chemical that may not have been reflected in your responses to previous sections of the form. Waste minimization reduces the amount of the

chemical in wastes that are generated. Treatment or disposal does not minimize waste, but recycling or reuse of a waste should be counted as waste minimization. Waste minimization applies to air emissions and wastewater, as well as to liquid or solid materials that are released, disposed of, or treated. For example, a program to recycle material from reactor cleaning could reduce the amount of a listed chemical in wastewater prior to treatment. This reduction might not show up in annual reports of releases to receiving streams (due to effective treatment, for example) but would be captured in this section.

A. Type of Modification

Enter from the following list the one code that best describes the type of waste minimization activity:

M1	Recycling/Reuse On-Site
M2	Recycling/Reuse Off-Site
M3	Equipment/Technology Modifications
M4	Process Procedure Modifications
M5	Reformulation/Redesign of Product
M6	Substitution of Raw Materials
M7	Improved Housekeeping, Training, Inventory Control
M8	Other Waste Minimization Technique

B. Quantity of the Chemical in the Wastestream Prior to Treatment/Disposal

Enter the pounds of the toxic chemical contained in all wastes in the reporting year and the pounds contained in all wastes in the year prior to the reporting year. Alternatively, to protect confidential information, you may wish to enter only the percentage by which the weight of the chemical in the wastes has changed. This figure may be calculated using the following formula:

$$\frac{\text{(toxic chemical in wastes in reporting year - toxic chemical in wastes in prior year)}}{\text{toxic chemical in wastes in prior year}} \times 100$$

The resulting figure may be either negative or positive (i.e., if the amount of waste generated has been reduced, a negative number should be reported).

C. Index

Enter the ratio of reporting-year production to production in the year prior to the reporting year. This index should be calculated to most closely reflect activities involving the chemical. The index provides a means for users of the data to distinguish effects due to changes in business activity from the effects specifically due to waste minimization efforts. It is not necessary to indicate the units on which the index is based. Examples of acceptable indices include:

- ❑ Amount of chemical produced in 1988/amount of chemical produced in 1987. For example, a company manufactures 200,000 pounds of a chemical in 1987 and 250,000 pounds of the same chemical in 1988. The index figure to report would be 1.3 (1.25 rounded to two significant digits).
- ❑ Amount of paint produced in 1988/amount of paint produced in 1987.
- ❑ Number of appliances coated in 1988/number of appliances coated in 1987.
- ❑ Square feet of solar collector fabricated in 1988/square feet of solar collector fabricated in 1987.

D. Reason for Action

Finally, enter the codes from the following list that best describe the reason for initiating the waste minimization effort:

R1	Regulatory Requirement for the Waste
R2	Reduction of Treatment/Disposal Costs
R3	Other Process Cost Reduction
R4	Self-Initiated Review
R5	Other (e.g., discontinuation of product, occupational safety).

TABLE I

SIC CODES 20-39

20 Food and Kindred Products

2011 Meat packing plants
2013 Sausages and other prepared meat products
2015 Poultry slaughtering and processing
2021 Creamery butter
2022 Natural, processed, and imitation cheese
2023 Dry, condensed, and evaporated dairy products
2024 Ice cream and frozen desserts
2026 Fluid milk
2032 Canned specialties
2033 Canned fruits, vegetables, preserves, jams, and jellies
2034 Dried and dehydrated fruits, vegetables, and soup mixes
2035 Pickled fruits and vegetables, vegetable sauces and seasonings, and salad dressings
2037 Frozen fruits, fruit juices, and vegetables
2038 Frozen specialties, n.e.c.*
2041 Flour and other grain mill products
2043 Cereal breakfast foods
2044 Rice milling
2045 Prepared flour mixes and doughs
2046 Wet corn milling
2047 Dog and cat food
2048 Prepared feeds and feed ingredients for animals and fowls, except dogs and cats
2051 Bread and other bakery products, except cookies and crackers
2052 Cookies and crackers
2053 Frozen bakery products, except bread
2061 Cane sugar, except refining
2062 Cane sugar refining
2063 Beet sugar
2064 Candy and other confectionary products
2066 Chocolate and cocoa products
2067 Chewing gum
2068 Salted and roasted nuts and seeds
2074 Cottonseed oil mills
2075 Soybean oil mills
2076 Vegetable oil mills, except corn, cottonseed, and soybean
2077 Animal and marine fats and oils
2079 Shortening, table oils, margarine, and other edible fats and oils, n.e.c.*
2082 Malt beverages
2083 Malt
2084 Wines, brandy, and brandy spirits
2085 Distilled and blended liquors
2086 Bottled and canned soft drinks and carbonated waters
2087 Flavoring extracts and flavoring syrups, n.e.c.*
2091 Canned and cured fish and seafoods
2092 Prepared fresh or frozen fish and seafoods
2095 Roasted coffee
2096 Potato chips, corn chips, and similar snacks
2097 Manufactured ice
2098 Macaroni, spaghetti, vermicelli, and noodles
2099 Food preparations, n.e.c.*

21 Tobacco Products

2111 Cigarettes
2121 Cigars
2131 Chewing and smoking tobacco and snuff
2141 Tobacco stemming and redrying

22 Textile Mill Products

2211 Broadwoven fabric mills, cotton
2221 Broadwoven fabric mills, manmade fiber, and silk
2231 Broadwoven fabric mills, wool (including dyeing and finishing)
2241 Narrow fabric and other smallwares mills: cotton, wool, silk, and manmade fiber
2251 Women's full length and knee length hosiery, except socks
2252 Hosiery, n.e.c.*
2253 Knit outerwear mills
2254 Knit underwear and nightwear mills
2257 Weft knit fabric mills
2258 Lace and warp knit fabric mills
2259 Knitting mills, n.e.c.*
2261 Finishers of broadwoven fabrics of cotton
2262 Finishers of broadwoven fabrics of manmade fiber and silk
2269 Finishers of textiles, n.e.c.*
2273 Carpets and rugs
2281 Yarn spinning mills
2282 Yarn texturizing, throwing, twisting, and winding mills
2284 Thread mills
2295 Coated fabrics, not rubberized
2296 Tire cord and fabrics
2297 Nonwoven fabrics
2298 Cordage and twine
2299 Textile goods, n.e.c.*

23 Apparel and Other Finished Products made from Fabrics and Other Similar Materials

2311 Men's and boys' suits, coats, and overcoats

2321 Men's and boys' shirts, except work shirts
2322 Men's and boys' underwear and nightwear
2323 Men's and boys' neckwear
2325 Men's and boys' separate trousers and slacks
2326 Men's and boys' work clothing
2329 Men's and boys' clothing, n.e.c.*
2331 Women's, misses', and juniors' blouses and shirts
2335 Women's, misses', and juniors' dresses
2337 Women's, misses', and juniors' suits, skirts, and coats
2339 Women's, misses', and juniors', outerwear, n.e.c.*
2341 Women's, misses', children's, and infants' underwear and nightwear
2342 Brassieres, girdles, and allied garments
2353 Hats, caps, and millinery
2361 Girls', children's and infants' dresses, blouses, and shirts
2369 Girls', children's and infants' outerwear, n.e.c.*
2371 Fur goods
2381 Dress and work gloves, except knit and all leather
2384 Robes and dressing gowns
2385 Waterproof outerwear
2386 Leather and sheep lined clothing
2387 Apparel belts
2389 Apparel and accessories, n.e.c.*
2391 Curtains and draperies
2392 Housefurnishings, except curtains and draperies
2393 Textile bags
2394 Canvas and related products
2395 Pleating, decorative and novelty stitching, and tucking for the trade
2396 Automotive trimmings, apparel findings, and related products
2397 Schiffli machine embroideries
2399 Fabricated textile products, n.e.c.*

24 Lumber and Wood Products, Except Furniture

2411 Logging
2421 Sawmills and planing mills, general
2426 Hardwood dimension and flooring mills
2429 Special product sawmills, n.e.c.*
2431 Millwork
2434 Wood kitchen cabinets
2435 Hardwood veneer and plywood
2436 Softwood veneer and plywood
2439 Structural wood members, n.e.c.*
2441 Nailed and lock corner wood boxes and shook
2448 Wood pallets and skids
2449 Wood containers, n.e.c.*
2451 Mobile homes
2452 Prefabricated wood buildings and components
2491 Wood preserving
2493 Reconstituted wood products
2499 Wood products, n.e.c.*

25 Furniture and Fixtures

2511 Wood household furniture, except upholstered
2512 Wood household furniture, upholstered
2514 Metal household furniture
2515 Mattresses, foundations, and convertible beds
2517 Wood television, radio, phonograph, and sewing machine cabinets
2519 Household furniture, n.e.c.*
2521 Wood office furniture
2522 Office furniture, except wood
2531 Public building and related furniture
2541 Wood office and store fixtures, partitions, shelving, and lockers
2542 Office and store fixtures, partitions, shelving, and lockers, except wood
2591 Drapery hardware and window blinds and shades
2599 Furniture and fixtures, n.e.c.*

26 Paper and Allied Products

2611 Pulp mills
2621 Paper mills
2631 Paperboard mills
2652 Setup paperboard boxes
2653 Corrugated and solid fiber boxes
2655 Fiber cans, tubes, drums, and similar products
2656 Sanitary food containers, except folding
2657 Folding paperboard boxes, including sanitary
2671 Packaging paper and plastics film, coated and laminated
2672 Coated and laminated paper, n.e.c.*
2673 Plastics, foil, and coated paper bags
2674 Uncoated paper and multiwall bags
2675 Die-cut paper and paperboard and cardboard
2676 Sanitary paper products
2677 Envelopes
2678 Stationery tablets, and related products
2679 Converted paper and paperboard products, n.e.c.*

27 Printing, Publishing, and Allied Industries

2711 Newspapers: publishing, or publishing and printing
2721 Periodicals: publishing, or publishing and printing
2731 Books: publishing, or publishing and printing
2732 Book printing
2741 Miscellaneous publishing
2752 Commercial printing, lithographic
2754 Commercial printing, gravure
2759 Commercial printing, n.e.c.*
2761 Manifold business forms
2771 Greeting cards
2782 Blankbooks, looseleaf binders and devices

2789 Bookbinding and related work
2791 Typesetting
2796 Platemaking and related services

28 Chemicals and Allied Products

2812 Alkalies and chlorine
2813 Industrial gases
2816 Inorganic pigments
2819 Industrial inorganic chemicals, n.e.c.*
2821 Plastics materials, synthetic resins, and nonvulcanizable elastomers
2822 Synthetic rubber (vulcanizable elastomers)
2823 Cellulosic manmade fibers
2824 Manmade organic fibers, except cellulosic
2833 Medicinal chemicals and botanical products
2834 Pharmaceutical preparations
2835 In vitro and in vivo diagnostic substances
2836 Biological products, except diagnostic substances
2841 Soap and other detergents, except specialty cleaners
2842 Specialty cleaning, polishing, and sanitation preparations
2843 Surface active agents, finishing agents, sulfonated oils, and assistants
2844 Perfumes, cosmetics, and other toilet preparations
2851 Paints, varnishes, lacquers, enamels, and allied products
2861 Gum and wood chemicals
2865 Cyclic organic crudes and intermediates, and organic dyes and pigments
2869 Industrial organic chemicals, n.e.c.*
2873 Nitrogenous fertilizers
2874 Phosphatic fertilizers
2875 Fertilizers, mixing only
2879 Pesticides and agricultural chemicals, n.e.c.*
2891 Adhesives and sealants
2892 Explosives
2893 Printing ink
2895 Carbon black
2899 Chemicals and chemical preparations, n.e.c.*

29 Petroleum Refining and Related Industries

2911 Petroleum refining
2951 Asphalt paving mixtures and blocks
2952 Asphalt felts and coatings
2992 Lubricating oils and greases
2999 Products of petroleum and coal, n.e.c.*

30 Rubber and Miscellaneous Plastics Products

3011 Tires and inner tubes
3021 Rubber and plastics footwear
3052 Rubber and plastics hose and belting
3053 Gaskets, packing, and sealing devices
3061 Molded, extruded, and lathecut mechanical rubber products
3069 Fabricated rubber products, n.e.c.*
3081 Unsupported plastics film and sheet
3082 Unsupported plastics profile shapes
3083 Laminated plastics plate, sheet, and profile shapes
3084 Plastics pipe
3085 Plastics bottles
3086 Plastics foam products
3087 Custom compounding of purchased plastics resins
3088 Plastics plumbing fixtures
3089 Plastics products, n.e.c.*

31 Leather and Leather Products

3111 Leather tanning and finishing
3131 Boot and shoe cut stock and findings
3142 House slippers
3143 Men's footwear, except athletic
3144 Women's footwear, except athletic
3149 Footwear, except rubber, n.e.c.*
3151 Leather gloves and mittens
3161 Luggage
3171 Women's handbags and purses
3172 Personal leather goods, except women's handbags and purses
3199 Leather goods, n.e.c.*

32 Stone, Clay, Glass and Concrete Products

3211 Flat glass
3221 Glass containers
3229 Pressed and blown glass and glassware, n.e.c.*
3231 Glass products, made of purchased glass
3241 Cement, hydraulic
3251 Brick and structural clay tile
3253 Ceramic wall and floor tile
3255 Clay refractories
3259 Structural clay products, n.e.c.*
3261 Vitreous china plumbing fixtures and china and earthenware fittings and bathroom accessories
3262 Vitreous china table and kitchen articles
3263 Fine earthenware (whiteware) table and kitchen articles
3264 Porcelain electrical supplies
3269 Pottery products, n.e.c.*
3271 Concrete block and brick
3272 Concrete products, except block and brick
3273 Ready mixed concrete
3274 Lime
3275 Gypsum products
3281 Cut stone and stone products
3291 Abrasive products
3292 Asbestos products

3295 Minerals and earths, ground or otherwise treated
3296 Mineral wool
3297 Nonclay refractories
3299 Nonmetallic mineral products, n.e.c.*

33 Primary Metal Industries

3312 Steel works, blast furnaces (including coke ovens), and rolling mills
3313 Electrometallurgical products, except steel
3315 Steel wiredrawing and steel nails and spikes
3316 Cold-rolled steel sheet, strip, and bars
3317 Steel pipe and tubes
3321 Gray and ductile iron foundries
3322 Malleable iron foundries
3324 Steel investment foundries
3325 Steel foundries, n.e.c.*
3331 Primary smelting and refining of copper
3334 Primary production of aluminum
3339 Primary smelting and refining of nonferrous metals, except copper and aluminum
3341 Secondary smelting and refining of nonferrous metals
3351 Rolling, drawing, and extruding of copper
3353 Aluminum sheet, plate, and foil
3354 Aluminum extruded products
3355 Aluminum rolling and drawing, n.e.c.*
3356 Rolling, drawing, and extruding of nonferrous metals, except copper and aluminum
3357 Drawing and insulating of nonferrous wire
3363 Aluminum die-castings
3364 Nonferrous die-castings, except aluminum
3365 Aluminum foundries
3366 Copper foundries
3369 Nonferrous foundries, except aluminum and copper
3398 Metal heat treating
3399 Primary metal products, n.e.c.*

34 Fabricated Metal Products, except Machinery and Transportation Equipment

3411 Metal cans
3412 Metal shipping barrels, drums, kegs, and pails
3421 Cutlery
3423 Hand and edge tools, except machine tools and handsaws
3425 Handsaws and saw blades
3429 Hardware, n.e.c.*
3431 Enameled iron and metal sanitary ware
3432 Plumbing fixture fittings and trim
3433 Heating equipment, except electric and warm air furnaces
3441 Fabricated structural metal
3442 Metal doors, sash, frames, molding, and trim
3443 Fabricated plate work (boiler shops)
3444 Sheet metal work
3446 Architectural and ornamental metal work
3448 Prefabricated metal buildings and components
3449 Miscellaneous structural metal work
3451 Screw machine products
3452 Bolts, nuts, screws, rivets, and washers
3462 Iron and steel forgings
3463 Nonferrous forgings
3465 Automotive stampings
3466 Crowns and closures
3469 Metal stampings, n.e.c.*
3471 Electroplating, plating, polishing, anodizing, and coloring
3479 Coating, engraving and allied services, n.e.c.*
3482 Small arms ammunition
3483 Ammunition, except for small arms
3484 Small arms
3489 Ordnance and accessories, n.e.c.*
3491 Industrial valves
3492 Fluid power valves and hose fittings
3493 Steel springs, except wire
3494 Valves and pipe fittings, n.e.c.*
3495 Wire springs
3496 Miscellaneous fabricated wire products
3497 Metal foil and leaf
3498 Fabricated pipe and pipe fittings
3499 Fabricated metal products, n.e.c.*

35 Industrial and Commercial Machinery and Computer Equipment

3511 Steam, gas and hydraulic turbines, and turbine generator set units
3519 Internal combustion engines, n.e.c.*
3523 Farm machinery and equipment
3524 Lawn and garden tractors and home lawn and garden equipment
3531 Construction machinery and equipment
3532 Mining machinery and equipment, except oil and gas field machinery and equipment
3533 Oil and gas field machinery and equipment
3534 Elevators and moving stairways
3535 Conveyors and conveying equipment
3536 Overhead traveling cranes, hoists, and monorail systems
3537 Industrial trucks, tractors, trailers, and stackers
3541 Machine tools, metal cutting types
3542 Machine tools, metal forming types
3543 Industrial patterns
3544 Special dies and tools, die sets, jigs and fixtures, and industrial molds
3545 Cutting tools, machine tool accessories, and machinists' measuring devices
3546 Power driven handtools

3547 Rolling mill machinery and equipment
3548 Electric and gas welding and soldering equipment
3549 Metalworking machinery, n.e.c.*
3552 Textile machinery
3553 Woodworking machinery
3554 Paper industries machinery
3555 Printing trades machinery and equipment
3556 Food products machinery
3559 Special industry machinery, n.e.c.*
3561 Pumps and pumping equipment
3562 Ball and roller bearings
3563 Air and gas compressors
3564 Industrial and commercial fans and blowers and air purification equipment
3565 Packaging equipment
3566 Speed changers, industrial high speed drives, and gears
3567 Industrial process furnaces and ovens
3568 Mechanical power transmission equipment, n.e.c.*
3569 General industrial machinery and equipment, n.e.c.*
3571 Electronic computers
3572 Computer storage devices
3575 Computer terminals
3577 Computer peripheral equipment, n.e.c.*
3578 Calculating and accounting machines, except electronic computers
3579 Office machines, n.e.c.*
3581 Automatic vending machines
3582 Commercial laundry, drycleaning, and pressing machines
3585 Air conditioning and warm air heating equipment and commercial and industrial refrigeration equipment
3586 Measuring and dispensing pumps
3589 Service industry machinery, n.e.c.*
3592 Carburetors, pistons, piston rings, and valves
3593 Fluid power cylinders and actuators
3594 Fluid power pumps and motors
3596 Scales and balances, except laboratory
3599 Industrial and commercial machinery and equipment, n.e.c.*

36 Electronic and Other Electrical Equipment and Components, Except Computer Equipment

3612 Power, distribution, and specialty transformers
3613 Switchgear and switchboard apparatus
3621 Motors and generators
3624 Carbon and graphite products
3625 Relays and industrial controls
3629 Electrical industrial appliances, n.e.c.*
3631 Household cooking equipment
3632 Household refrigerators and home and farm freezers
3633 Household laundry equipment
3634 Electrical housewares and fans
3635 Household vacuum cleaners
3639 Household appliances, n.e.c.*
3641 Electric lampbulbs and tubes
3643 Current carrying wiring devices
3644 Noncurrent carrying wiring devices
3645 Residential electric lighting fixtures
3646 Commercial, industrial, and institutional electric lighting fixtures
3647 Vehicular lighting equipment
3648 Lighting equipment, n.e.c.*
3651 Household audio and video equipment
3652 Phonograph records and pre-recorded audio tapes and disks
3661 Telephone and telegraph apparatus
3663 Radio and television broadcasting and communications equipment
3669 Communications equipment, n.e.c.*
3671 Electron tubes
3672 Printed circuit boards
3674 Semiconductors and related devices
3675 Electronic capacitors
3676 Electronic resistors
3677 Electronic coils, transformers, and other inductors
3678 Electronic connectors
3679 Electronic components, n.e.c.*
3691 Storage batteries
3692 Primary batteries, dry and wet
3694 Electric equipment for internal combustion engines
3695 Magnetic and optical recording media
3699 Electrical machinery, equipment, and supplies, n.e.c.*

37 Transportation Equipment

3711 Motor vehicles and passenger car bodies
3713 Truck and bus bodies
3714 Motor vehicle parts and accessories
3715 Truck trailers
3716 Motor homes
3721 Aircraft
3724 Aircraft engines and engine parts
3728 Aircraft parts and auxiliary equipment, n.e.c.*
3731 Ship building and repairing
3732 Boat building and repairing
3743 Railroad equipment
3751 Motorcycles, bicycles and parts
3761 Guided missiles and space vehicles
3764 Guided missile and space vehicle propulsion units and propulsion unit parts
3769 Guided missile and space vehicle parts and auxiliary equipment, n.e.c.*
3792 Travel trailers and campers
3795 Tanks and tank components
3799 Transportation equipment, n.e.c.*

38 Measuring, Analyzing, and Controlling Instruments; Photographic, Medical and Optical Goods; Watches and Clocks

- 3812 Search, detection, navigation, guidance, aeronautical, and nautical systems and instruments
- 3821 Laboratory apparatus and furniture
- 3822 Automatic controls for regulating residential and commercial environments and appliances
- 3823 Industrial instruments for measurement, display, and control of process variables; and related products
- 3824 Totalizing fluid meters and counting devices
- 3825 Instruments for measuring and testing of electricity and electrical signals
- 3826 Laboratory analytical instruments
- 3827 Optical instruments and lenses
- 3829 Measuring and controlling devices, n.e.c.*
- 3841 Surgical and medical instruments and apparatus
- 3842 Orthopedic, prosthetic, and surgical appliances and supplies
- 3843 Dental equipment and supplies
- 3844 X-ray apparatus and tubes and related irradiation apparatus
- 3845 Electromedical and electrotherapeutic apparatus
- 3851 Ophthalmic goods
- 3861 Photographic equipment and supplies
- 3873 Watches, clocks, clockwork operated devices, and parts

39 Miscellaneous Manufacturing Industries

- 3911 Jewelry, precious metal
- 3914 Silverware, plated ware, and stainless steel ware
- 3915 Jewelers' findings and materials, and lapidary work
- 3931 Musical instruments
- 3942 Dolls and stuffed toys
- 3944 Games, toys and children's vehicles; except dolls and bicycles
- 3949 Sporting and athletic goods, n.e.c.*
- 3951 Pens, mechanical pencils, and parts
- 3952 Lead pencils, crayons, and artists' materials
- 3953 Marking devices
- 3955 Carbon paper and inked ribbons
- 3961 Costume jewelry and costume novelties, except precious metal
- 3965 Fasteners, buttons, needles, and pins
- 3991 Brooms and brushes
- 3993 Signs and advertising specialties
- 3995 Burial caskets
- 3996 Linoleum, asphalted-felt-base, and other hard surface floor coverings, n.e.c.*
- 3999 Manufacturing industries, n.e.c.*

*"Not elsewhere classified" indicated by "n.e.c."

TABLE II

SECTION 313 TOXIC CHEMICAL LIST FOR REPORTING YEAR 1988
(including Chemical Categories)

Specific toxic chemicals with CAS Number are listed in alphabetical order on this page. A list of the same chemicals in CAS Number order begins on page 40. Covered Chemical Categories are listed beginning on page 43.

[Note: Chemicals may be added to or deleted from the list. The Emergency Planning and Community Right-to-Know Information Hotline, (800) 535-0202 or (202) 479-2449 in Washington, D.C. or Alaska, will provide up-to-date information on the status of these changes. See page 7 of the instructions for more information on the de minimis values listed below.]

a. Alphabetical Chemical List

CAS Number	Chemical Name	De Minimis Concentration
75-07-0	Acetaldehyde	0.1
60-35-5	Acetamide	0.1
67-64-1	Acetone	1.0
75-05-8	Acetonitrile	1.0
53-96-3	2-Acetylaminofluorene	0.1
107-02-8	Acrolein	1.0
79-06-1	Acrylamide	0.1
79-10-7	Acrylic acid	1.0
107-13-1	Acrylonitrile	0.1
309-00-2	Aldrin {1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a, 5,8,8a-hexahydro-(1.alpha., 4.alpha.,4a.beta.,5.alpha., 8.alpha.,8a.beta.)-}	1.0
107-05-1	Allyl chloride	1.0
7429-90-5	Aluminum (fume or dust)	1.0
1344-28-1	Aluminum oxide	1.0
117-79-3	2-Aminoanthraquinone	0.1
60-09-3	4-Aminoazobenzene	0.1
92-67-1	4-Aminobiphenyl	0.1
82-28-0	1-Amino-2-methylanthraquinone	0.1
7664-41-7	Ammonia	1.0
6484-52-2	Ammonium nitrate (solution)	1.0
7783-20-2	Ammonium sulfate (solution)	1.0
62-53-3	Aniline	1.0
90-04-0	o-Anisidine	0.1
104-94-9	p-Anisidine	1.0
134-29-2	o-Anisidine hydrochloride	0.1
120-12-7	Anthracene	1.0
7440-36-0	Antimony	1.0
7440-38-2	Arsenic	0.1
1332-21-4	Asbestos (friable)	0.1
7440-39-3	Barium	1.0
98-87-3	Benzal chloride	1.0
55-21-0	Benzamide	1.0
71-43-2	Benzene	0.1
92-87-5	Benzidine	0.1
98-07-7	Benzoic trichloride (Benzotrichloride)	0.1
98-88-4	Benzoyl chloride	1.0
94-36-0	Benzoyl peroxide	1.0
100-44-7	Benzyl chloride	1.0
7440-41-7	Beryllium	0.1
92-52-4	Biphenyl	1.0
111-44-4	Bis(2-chloroethyl) ether	1.0
542-88-1	Bis(chloromethyl) ether	0.1
108-60-1	Bis(2-chloro-1-methylethyl) ether	1.0
103-23-1	Bis(2-ethylhexyl) adipate	0.1
75-25-2	Bromoform {Tribromomethane}	1.0
74-83-9	Bromomethane {Methyl bromide}	1.0
106-99-0	1,3-Butadiene	0.1
141-32-2	Butyl acrylate	1.0
71-36-3	n-Butyl alcohol	1.0
78-92-2	sec-Butyl alcohol	1.0
75-65-0	tert-Butyl alcohol	1.0
85-68-7	Butyl benzyl phthalate	1.0
106-88-7	1,2-Butylene oxide	1.0
123-72-8	Butyraldehyde	1.0
4680-78-8	C.I. Acid Green 3*	1.0
569-64-2	C.I. Basic Green 4*	1.0
989-38-8	C.I. Basic Red 1*	0.1
1937-37-7	C.I. Direct Black 38*	0.1
2602-46-2	C.I. Direct Blue 6*	0.1
16071-86-6	C.I. Direct Brown 95*	0.1
2832-40-8	C.I. Disperse Yellow 3*	1.0
3761-53-3	C.I. Food Red 5*	0.1
81-88-9	C.I. Food Red 15*	0.1
3118-97-6	C.I. Solvent Orange 7*	1.0
97-56-3	C.I. Solvent Yellow 3*	0.1
842-07-9	C.I. Solvent Yellow 14*	0.1
492-80-8	C.I. Solvent Yellow 34* (Auramine)	0.1
128-66-5	C.I. Vat Yellow 4*	1.0
7440-43-9	Cadmium	0.1
156-62-7	Calcium cyanamide	1.0
133-06-2	Captan {1H-Isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2-[(trichloromethyl)thio]-}	1.0

CAS Number	Chemical Name	De Minimis Concentration
63-25-2	Carbaryl {1-Naphthalenol, methylcarbamate}	1.0
75-15-0	Carbon disulfide	1.0
56-23-5	Carbon tetrachloride	0.1
463-58-1	Carbonyl sulfide	1.0
120-80-9	Catechol	1.0
133-90-4	Chloramben {Benzoic acid, 3-amino-2,5-dichloro-}	1.0
57-74-9	Chlordane {4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-}	1.0
7782-50-5	Chlorine	1.0
10049-04-4	Chlorine dioxide	1.0
79-11-8	Chloroacetic acid	1.0
532-27-4	2-Chloroacetophenone	1.0
108-90-7	Chlorobenzene	1.0
510-15-6	Chlorobenzilate {Benzeneacetic acid,4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-hydroxy-,ethyl ester}	1.0
75-00-3	Chloroethane {Ethyl chloride}	1.0
67-66-3	Chloroform	0.1
74-87-3	Chloromethane {Methyl chloride}	1.0
107-30-2	Chloromethyl methyl ether	0.1
126-99-8	Chloroprene	1.0
1897-45-6	Chlorothalonil {1,3-Benzenedicarbonitrile, 2,4,5,6-tetrachloro-}	1.0
7440-47-3	Chromium	0.1
7440-48-4	Cobalt	1.0
7440-50-8	Copper	1.0
120-71-8	p-Cresidine	0.1
1319-77-3	Cresol (mixed isomers)	1.0
108-39-4	m-Cresol	1.0
95-48-7	o-Cresol	1.0
106-44-5	p-Cresol	1.0
98-82-8	Cumene	1.0
80-15-9	Cumene hydroperoxide	1.0
135-20-6	Cupferron {Benzeneamine, N-hydroxy-N-nitroso, ammonium salt}	0.1
110-82-7	Cyclohexane	1.0
94-75-7	2,4-D {Acetic acid, (2,4-dichlorophenoxy)-}	1.0
1163-19-5	Decabromodiphenyl oxide	1.0
2303-16-4	Diallate {Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester}	1.0
615-05-4	2,4-Diaminoanisole	0.1
39156-41-7	2,4-Diaminoanisole sulfate	0.1
101-80-4	4,4'-Diaminodiphenyl ether	0.1
25376-45-8	Diaminotoluene (mixed isomers)	0.1
95-80-7	2,4-Diaminotoluene	0.1
334-88-3	Diazomethane	1.0
132-64-9	Dibenzofuran	1.0
96-12-8	1,2-Dibromo-3-chloropropane {DBCP}	0.1
106-93-4	1,2-Dibromoethane {Ethylene dibromide}	0.1
84-74-2	Dibutyl phthalate	1.0
25321-22-6	Dichlorobenzene (mixed isomers)	0.1
95-50-1	1,2-Dichlorobenzene	1.0
541-73-1	1,3-Dichlorobenzene	1.0
106-46-7	1,4-Dichlorobenzene	0.1
91-94-1	3,3'-Dichlorobenzidine	0.1
75-27-4	Dichlorobromomethane	1.0
107-06-2	1,2-Dichloroethane {Ethylene dichloride}	0.1
540-59-0	1,2-Dichloroethylene	1.0
75-09-2	Dichloromethane {Methylene chloride}	0.1
120-83-2	2,4-Dichlorophenol	1.0
78-87-5	1,2-Dichloropropane	1.0
542-75-6	1,3-Dichloropropylene	0.1
62-73-7	Dichlorvos {Phosphonic acid, 2,2-dichloroethenyl dimethyl ester}	1.0
115-32-2	Dicofol {Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.- (trichloromethyl)-}	1.0
1464-53-5	Diepoxybutane	0.1
111-42-2	Diethanolamine	1.0
117-81-7	Di-(2-ethylhexyl) phthalate {DEHP}	0.1
84-66-2	Diethyl phthalate	1.0
64-67-5	Diethyl sulfate	0.1
119-90-4	3,3'-Dimethoxybenzidine	0.1
60-11-7	4-Dimethylaminoazobenzene	0.1
119-93-7	3,3'-Dimethylbenzidine {o-Tolidine}	0.1
79-44-7	Dimethylcarbamyl chloride	0.1
57-14-7	1,1-Dimethyl hydrazine	0.1
105-67-9	2,4-Dimethylphenol	1.0
131-11-3	Dimethyl phthalate	1.0
77-78-1	Dimethyl sulfate	0.1
534-52-1	4,6-Dinitro-o-cresol	1.0
51-28-5	2,4-Dinitrophenol	1.0
121-14-2	2,4-Dinitrotoluene	1.0
606-20-2	2,6-Dinitrotoluene	1.0
117-84-0	n-Dioctyl phthalate	1.0
123-91-1	1,4-Dioxane	0.1

CAS Number	Chemical Name	De Minimis Concentration
122-66-7	1,2-Diphenylhydrazine (Hydrazobenzene)	0.1
106-89-8	Epichlorohydrin	0.1
110-80-5	2-Ethoxyethanol	1.0
140-88-5	Ethyl acrylate	0.1
100-41-4	Ethylbenzene	1.0
541-41-3	Ethyl chloroformate	1.0
74-85-1	Ethylene	1.0
107-21-1	Ethylene glycol	1.0
151-56-4	Ethyleneimine (Aziridine)	0.1
75-21-8	Ethylene oxide	0.1
96-45-7	Ethylene thiourea	0.1
2164-17-2	Fluometuron (Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-)	1.0
50-00-0	Formaldehyde	0.1
76-13-1	Freon 113 (Ethane, 1,1,2-trichloro-1,2,2-trifluoro-)	1.0
76-44-8	Heptachlor (1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene)	1.0
118-74-1	Hexachlorobenzene	0.1
87-68-3	Hexachloro-1,3-butadiene	1.0
77-47-4	Hexachlorocyclopentadiene	1.0
67-72-1	Hexachloroethane	1.0
1335-87-1	Hexachloronaphthalene	1.0
680-31-9	Hexamethylphosphoramide	0.1
302-01-2	Hydrazine	0.1
10034-93-2	Hydrazine sulfate	0.1
7647-01-0	Hydrochloric acid	1.0
74-90-8	Hydrogen cyanide	1.0
7664-39-3	Hydrogen fluoride	1.0
123-31-9	Hydroquinone	1.0
78-84-2	Isobutyraldehyde	1.0
67-63-0	Isopropyl alcohol (manufacturing-strong acid process, no supplier notification)	0.1
80-05-7	4,4'-Isopropylidenediphenol	1.0
7439-92-1	Lead	0.1
58-89-9	Lindane (Cyclohexane,1,2,3,4,5,6-hexachloro-,(1.alpha.,2.alpha.,3.beta.,4.alpha.,5.alpha.,6.beta.)-)	0.1
108-31-6	Maleic anhydride	1.0
12427-38-2	Maneb (Carbamodithioic acid, 1,2-ethanediylbis-,manganese complex)	1.0
7439-96-5	Manganese	1.0
108-78-1	Melamine	1.0
7439-97-6	Mercury	1.0
67-56-1	Methanol	1.0
72-43-5	Methoxychlor (Benzene, 1,1'-(2,2,2-trichloroethylidene)bis [4-methoxy-)	1.0
109-86-4	2-Methoxyethanol	1.0
96-33-3	Methyl acrylate	1.0
1634-04-4	Methyl tert-butyl ether	1.0
101-14-4	4,4'-Methylenebis (2-chloroaniline) (MBOCA)	0.1
101-61-1	4,4'-Methylenebis(N,N-dimethyl) benzenamine	0.1
101-68-8	Methylenebis (phenylisocyanate) (MBI)	1.0
74-95-3	Methylene bromide	1.0
101-77-9	4,4'-Methylenedianiline	0.1
78-93-3	Methyl ethyl ketone	1.0
60-34-4	Methyl hydrazine	1.0
74-88-4	Methyl iodide	0.1
108-10-1	Methyl isobutyl ketone	1.0
624-83-9	Methyl isocyanate	1.0
80-62-6	Methyl methacrylate	1.0
90-94-8	Michler's ketone	0.1
1313-27-5	Molybdenum trioxide	1.0
505-60-2	Mustard gas (Ethane, 1,1'-thiobis[2-chloro-)	0.1
91-20-3	Naphthalene	1.0
134-32-7	alpha-Naphthylamine	0.1
91-59-8	beta-Naphthylamine	0.1
7440-02-0	Nickel	0.1
7697-37-2	Nitric acid	1.0
139-13-9	Nitrilotriacetic acid	0.1
99-59-2	5-Nitro-o-anisidine	0.1
98-95-3	Nitrobenzene	1.0
92-93-3	4-Nitrobiphenyl	0.1
1836-75-5	Nitrofen (Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-)	0.1
51-75-2	Nitrogen mustard (2-Chloro-N-(2-chloroethyl)-N-methylethanamine)	0.1
55-63-0	Nitroglycerin	1.0
88-75-5	2-Nitrophenol	1.0
100-02-7	4-Nitrophenol	1.0
79-46-9	2-Nitropropane	0.1
156-10-5	p-Nitrosodiphenylamine	0.1
121-69-7	N,N-Dimethylaniline	1.0
924-16-3	N-Nitrosodi-n-butylamine	0.1
55-18-5	N-Nitrosodiethylamine	0.1
62-75-9	N-Nitrosodimethylamine	0.1
86-30-6	N-Nitrosodiphenylamine	1.0
621-64-7	N-Nitrosodi-n-propylamine	0.1
4549-40-0	N-Nitrosomethylvinylamine	0.1

CAS Number	Chemical Name	De Minimis Concentration
59-89-2	N-Nitrosomorpholine	0.1
759-73-9	N-Nitroso-N-ethylurea	0.1
684-93-5	N-Nitroso-N-methylurea	0.1
16543-55-8	N-Nitrosonornicotine	0.1
100-75-4	N-Nitrosopipendine	0.1
2234-13-1	Octachloronaphthalene	1.0
20816-12-0	Osmium tetroxide	1.0
56-38-2	Parathion (Phosphorothioic acid, o, o-diethyl-o-(4-nitrophenyl) ester)	1.0
87-86-5	Pentachlorophenol (PCP)	1.0
79-21-0	Peracetic acid	1.0
108-95-2	Phenol	1.0
106-50-3	p-Phenylenediamine	1.0
90-43-7	2-Phenylphenol	1.0
75-44-5	Phosgene	1.0
7664-38-2	Phosphoric acid	1.0
7723-14-0	Phosphorus (yellow or white)	1.0
85-44-9	Phthalic anhydride	1.0
88-89-1	Picric acid	1.0
1336-36-3	Polychlorinated biphenyls (PCBs)	0.1
1120-71-4	Propane sultone	0.1
57-57-8	beta-Propiolactone	0.1
123-38-6	Propionaldehyde	1.0
114-26-1	Propoxur (Phenol, 2-(1-methylethoxy)-, methylcarbamate)	1.0
115-07-1	Propylene (Propene)	1.0
75-55-8	Propyleneimine	0.1
75-56-9	Propylene oxide	0.1
110-86-1	Pyridine	1.0
91-22-5	Quinoline	1.0
106-51-4	Quinone	1.0
82-68-8	Quintozene (Pentachloronitrobenzene)	1.0
81-07-2	Saccharin (manufacturing, no supplier notification) (1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide)	0.1
94-59-7	Safrole	0.1
7782-49-2	Selenium	1.0
7440-22-4	Silver	1.0
1310-73-2	Sodium hydroxide (solution)	1.0
7757-82-6	Sodium sulfate (solution)	1.0
100-42-5	Styrene	0.1
96-09-3	Styrene oxide	0.1
7664-93-9	Sulfuric acid	1.0
100-21-0	Terephthalic acid	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.1
127-18-4	Tetrachloroethylene (Perchloroethylene)	0.1
961-11-5	Tetrachlorvinphos (Phosphonic acid, 2-chloro-1-(2,3,5-trichlorophenyl) ethenyl dimethyl ester)	1.0
7440-28-0	Thallium	1.0
62-55-5	Thioacetamide	0.1
139-65-1	4,4'-Thiodianiline	0.1
62-56-6	Thiourea	0.1
1314-20-1	Thorium dioxide	1.0
7550-45-0	Titanium tetrachloride	1.0
108-88-3	Toluene	1.0
584-84-9	Toluene-2,4-diisocyanate	0.1
91-08-7	Toluene-2,6-diisocyanate	0.1
95-53-4	o-Toluidine	0.1
636-21-5	o-Toluidine hydrochloride	0.1
8001-35-2	Toxaphene	0.1
68-76-8	Triaziquone (2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris(1-azindinyl)-)	0.1
52-68-6	Trichlorfon (Phosphonic acid,(2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester)	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0
71-55-6	1,1,1-Trichloroethane (Methyl chloroform)	1.0
79-00-5	1,1,2-Trichloroethane	1.0
79-01-6	Trichloroethylene	1.0
95-95-4	2,4,5-Trichlorophenol	1.0
88-06-2	2,4,6-Trichlorophenol	0.1
1582-09-8	Trifluralin (Benzenamine, 2,6-dinitro-N,N-dipropyl-4-(trifluoromethyl)-)	1.0
95-63-6	1,2,4-Trimethylbenzene	1.0
126-72-7	Tris (2,3-dibromopropyl) phosphate	0.1
51-79-6	Urethane (Ethyl carbamate)	0.1
7440-62-2	Vanadium (fume or dust)	1.0
108-05-4	Vinyl acetate	1.0
593-60-2	Vinyl bromide	0.1
75-01-4	Vinyl chloride	0.1
75-35-4	Vinylidene chloride	1.0
1330-20-7	Xylene (mixed isomers)	1.0
108-38-3	m-Xylene	1.0
95-47-6	o-Xylene	1.0
106-42-3	p-Xylene	1.0
87-62-7	2,6-Xylidine	1.0
7440-66-6	Zinc (fume or dust)	1.0
12122-67-7	Zineb (Carbamodithioic acid, 1,2-ethanediylbis-, zinc complex)	1.0

b. List By CAS Number

CAS Number	Chemical Name	De Minimis Concentration
50-00-0	Formaldehyde	0.1
51-28-5	2,4-Dinitrophenol	1.0
51-75-2	Nitrogen mustard {2-Chloro-N-(2-chloroethyl)-N-methylanamine}	0.1
51-79-6	Urethane {Ethyl carbamate}	0.1
52-68-6	Trichlorfon {Phosphonic acid,(2,2,2-trichloro-1-hydroxyethyl)-, dimethyl ester}	1.0
53-96-3	2-Acetylaminofluorene	0.1
55-18-5	N-Nitrosodiethylamine	0.1
55-21-0	Benzamide	1.0
55-63-0	Nitroglycerin	1.0
56-23-5	Carbon tetrachloride	0.1
56-38-2	Parathion {Phosphorothioic acid, o,o-diethyl-o-(4-nitrophenyl)ester}	1.0
57-14-7	1,1-Dimethyl hydrazine	0.1
57-57-8	beta-Propiolactone	0.1
57-74-9	Chlordane {4,7-Methanoindan,1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-}	1.0
58-89-9	Lindane {Cyclohexane,1,2,3,4,5,6-hexachloro-,(1.alpha.,2.alpha., 3 beta., 4 alpha.,5.alpha.,6.beta.)-}	0.1
59-89-2	N-Nitrosomorpholine	0.1
60-09-3	4-Aminoazobenzene	0.1
60-11-7	4-Dimethylaminoazobenzene	0.1
60-34-4	Methyl hydrazine	1.0
60-35-5	Acetamide	0.1
62-53-3	Aniline	1.0
62-55-5	Thioacetamide	0.1
62-56-6	Thiourea	0.1
62-73-7	Dichlorvos {Phosphonic acid, 2,2-dichloroethenyl dimethyl ester}	1.0
62-75-9	N-Nitrosodimethylamine	0.1
63-25-2	Carbaryl {1-Naphthalenol, methylcarbamate}	1.0
64-67-5	Diethyl sulfate	0.1
67-56-1	Methanol	1.0
67-63-0	Isopropyl alcohol (manufacturing-strong acid process, no supplier notification)	0.1
67-64-1	Acetone	1.0
67-66-3	Chloroform	0.1
67-72-1	Hexachloroethane	1.0
68-76-8	Triaziquone {2,5-Cyclohexadiene-1,4-dione, 2,3,5-tris(1-aziridinyl)-}	0.1
71-36-3	n-Butyl alcohol	1.0
71-43-2	Benzene	0.1
71-55-6	1,1,1-Trichloroethane {Methyl chloroform}	1.0
72-43-5	Methoxychlor {Benzene, 1,1'-(2,2,2-trichloroethylidene)bis {4-methoxy-}	1.0
74-83-9	Bromomethane {Methyl bromide}	1.0
74-85-1	Ethylene	1.0
74-87-3	Chloromethane {Methyl chloride}	1.0
74-88-4	Methyl iodide	0.1
74-90-8	Hydrogen cyanide	1.0
74-95-3	Methylene bromide	1.0
75-00-3	Chloroethane {Ethyl chloride}	1.0
75-01-4	Vinyl chloride	0.1
75-05-8	Acetonitrile	0.1
75-07-0	Acetaldehyde	1.0
75-09-2	Dichloromethane {Methylene chloride}	0.1
75-15-0	Carbon disulfide	1.0
75-21-8	Ethylene oxide	0.1
75-25-2	Bromoform {Tribromomethane}	1.0
75-27-4	Dichlorobromomethane	1.0
75-35-4	Vinylidene chloride	1.0
75-44-5	Phosgene	1.0
75-55-8	Propyleneimine	0.1
75-56-9	Propylene oxide	0.1
75-65-0	tert-Butyl alcohol	1.0
76-13-1	Freon 113 {Ethane, 1,1,2-trichloro-1,2,2-trifluoro-}	1.0
76-44-8	Heptachlor {1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene}	1.0
77-47-4	Hexachlorocyclopentadiene	1.0
77-78-1	Dimethyl sulfate	0.1
78-84-2	Isobutyraldehyde	1.0
78-87-5	1,2-Dichloropropane	1.0
78-92-2	sec-Butyl alcohol	1.0
78-93-3	Methyl ethyl ketone	1.0
79-00-5	1,1,2-Trichloroethane	1.0
79-01-6	Trichloroethylene	1.0
79-06-1	Acrylamide	0.1
79-10-7	Acrylic acid	1.0
79-11-8	Chloroacetic acid	1.0
79-21-0	Peracetic acid	1.0
79-34-5	1,1,2,2-Tetrachloroethane	0.1
79-44-7	Dimethylcarbamyl chloride	0.1
79-46-9	2-Nitropropane	0.1

CAS Number	Chemical Name	De Minimis Concentration
80-05-7	4,4'-Isopropylidenediphenol	1.0
80-15-9	Cumene hydroperoxide	1.0
80-62-6	Methyl methacrylate	1.0
81-07-2	Saccharin (manufacturing, no supplier notification) (1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide)	0.1
81-88-9	C.I. Food Red 15*	0.1
82-28-0	1-Amino-2-methylanthraquinone	0.1
82-68-8	Quintozene (Pentachloronitro-benzene)	1.0
84-66-2	Diethyl phthalate	1.0
84-74-2	Dibutyl phthalate	1.0
85-44-9	Phthalic anhydride	1.0
85-68-7	Butyl benzyl phthalate	1.0
86-30-6	N-Nitrosodiphenylamine	1.0
87-62-7	2,6-Xylidine	1.0
87-68-3	Hexachloro-1,3-butadiene	1.0
87-86-5	Pentachlorophenol (PCP)	1.0
88-06-2	2,4,6-Trichlorophenol	0.1
88-75-5	2-Nitrophenol	1.0
88-89-1	Picric acid	1.0
90-04-0	o-Anisidine	0.1
90-43-7	2-Phenylphenol	1.0
90-94-8	Michler's ketone	0.1
91-08-7	Toluene-2,6-diisocyanate	0.1
91-20-3	Naphthalene	1.0
91-22-5	Quinoline	1.0
91-59-8	beta-Naphthylamine	0.1
91-94-1	3,3'-Dichlorobenzidine	0.1
92-52-4	Biphenyl	1.0
92-67-1	4-Aminobiphenyl	0.1
92-87-5	Benzidine	0.1
92-93-3	4-Nitrobiphenyl	0.1
94-36-0	Benzoyl peroxide	1.0
94-59-7	Safrole	0.1
94-75-7	2,4-D (Acetic acid, (2,4-dichlorophenoxy)-)	1.0
95-47-6	o-Xylene	1.0
95-48-7	o-Cresol	1.0
95-50-1	1,2-Dichlorobenzene	1.0
95-53-4	o-Toluidine	0.1
95-63-6	1,2,4-Trimethylbenzene	1.0
95-80-7	2,4-Diaminotoluene	0.1
95-95-4	2,4,5-Trichlorophenol	1.0
96-09-3	Styrene oxide	0.1
96-12-8	1,2-Dibromo-3-chloropropane (DBCP)	0.1
96-33-3	Methyl acrylate	1.0
96-45-7	Ethylene thiourea	0.1
97-56-3	C.I. Solvent Yellow 3*	0.1
98-07-7	Benzoic trichloride (Benzotrichloride)	0.1
98-82-8	Cumene	1.0
98-87-3	Benzal chloride	1.0
98-88-4	Benzoyl chloride	1.0
98-95-3	Nitrobenzene	1.0
99-59-2	5-Nitro-o-anisidine	0.1
100-02-7	4-Nitrophenol	1.0
100-21-0	Terephthalic acid	1.0
100-41-4	Ethylbenzene	1.0
100-42-5	Styrene	0.1
100-44-7	Benzyl chloride	1.0
100-75-4	N-Nitrosopiperidine	0.1
101-14-4	4,4'-Methylenebis (2-chloroaniline) (MBOCA)	0.1
101-61-1	4,4'-Methylenebis(N,N-dimethyl) benzenamine	0.1
101-68-8	Methylenebis(phenylisocyanate) (MBI)	1.0
101-77-9	4,4'-Methylenedianiline	0.1
101-80-4	4,4'-Diaminodiphenyl ether	0.1
103-23-1	Bis(2-ethylhexyl) adipate	0.1
104-94-9	p-Anisidine	1.0
105-67-9	2,4-Dimethylphenol	1.0
106-42-3	p-Xylene	1.0
106-44-5	p-Cresol	1.0
106-46-7	1,4-Dichlorobenzene	0.1
106-50-3	p-Phenylenediamine	1.0
106-51-4	Quinone	1.0
106-88-7	1,2-Butylene oxide	1.0
106-89-8	Epichlorohydrin	0.1
106-93-4	1,2-Dibromoethane (Ethylene dibromide)	0.1
106-99-0	1,3-Butadiene	0.1
107-02-8	Acrolein	1.0
107-05-1	Allyl chloride	1.0
107-06-2	1,2-Dichloroethane (Ethylene dichloride)	0.1
107-13-1	Acrylonitrile	0.1
107-21-1	Ethylene glycol	1.0
107-30-2	Chloromethyl methyl ether	0.1
108-05-4	Vinyl acetate	1.0
108-10-1	Methyl isobutyl ketone	1.0
108-31-6	Maleic anhydride	1.0
108-38-3	m-Xylene	1.0
108-39-4	m-Cresol	1.0
108-60-1	Bis(2-chloro-1-methylethyl) ether	1.0
108-78-1	Melamine	1.0
108-88-3	Toluene	1.0
108-90-7	Chlorobenzene	1.0
108-95-2	Phenol	1.0
109-86-4	2-Methoxyethanol	1.0

CAS Number	Chemical Name	De Minimis Concentration
110-80-5	2-Ethoxyethanol	1.0
110-82-7	Cyclohexane	1.0
110-86-1	Pyridine	1.0
111-42-2	Diethanolamine	1.0
111-44-4	Bis(2-chloroethyl) ether	1.0
114-26-1	Propoxur {Phenol, 2-(1-methylethoxy)-, methylcarbamate}	1.0
115-07-1	Propylene (Propene)	1.0
115-32-2	Dicofol {Benzenemethanol, 4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-(trichloromethyl)-}	1.0
117-79-3	2-Aminoanthraquinone	0.1
117-81-7	Di(2-ethylhexyl) phthalate {DEHP}	0.1
117-84-0	n-Dioctyl phthalate	1.0
118-74-1	Hexachlorobenzene	0.1
119-90-4	3,3'-Dimethoxybenzidine	0.1
119-93-7	3,3'-Dimethylbenzidine {o-Tolidine}	0.1
120-12-7	Anthracene	1.0
120-71-8	p-Cresidine	0.1
120-80-9	Catechol	1.0
120-82-1	1,2,4-Trichlorobenzene	1.0
120-83-2	2,4-Dichlorophenol	1.0
121-14-2	2,4-Dinitrotoluene	1.0
121-69-7	N,N-Dimethylaniline	1.0
122-66-7	1,2-Diphenylhydrazine {Hydrazobenzene}	0.1
123-31-9	Hydroquinone	1.0
123-38-6	Propionaldehyde	1.0
123-72-8	Butyraldehyde	1.0
123-91-1	1,4-Dioxane	0.1
126-72-7	Tris(2,3-dibromopropyl) phosphate	0.1
126-99-8	Chloroprene	1.0
127-18-4	Tetrachloroethylene {Perchloroethylene}	0.1
128-66-5	C.I. Vat Yellow 4*	1.0
131-11-3	Dimethyl phthalate	1.0
132-64-9	Dibenzofuran	1.0
133-06-2	Captan {1H-Isoindole-1,3(2H)-dione, 3a,4,7,7a-tetrahydro-2[(trichloromethy)thio]-}	1.0
133-90-4	Chloramben {Benzoic acid, 3-amino-2,5-dichloro-}	1.0
134-29-2	o-Anisidine hydrochloride	0.1
134-32-7	alpha-Naphthylamine	0.1
135-20-6	Cupferron {Benzeneamine, N-hydroxy-N-nitroso,ammonium salt}	0.1
139-13-9	Nitrilotriacetic acid	0.1
139-65-1	4,4'-Thiodianiline	0.1
140-88-5	Ethyl acrylate	0.1
141-32-2	Butyl acrylate	1.0
151-56-4	Ethyleneimine (Aziridine)	0.1
156-10-5	p-Nitrosodiphenylamine	0.1
156-62-7	Calcium cyanamide	1.0
302-01-2	Hydrazine	0.1
309-00-2	Aldrin {1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a, 5,8,8a-hexahydro-(1.alpha., 4.alpha.,4a.beta.,5.alpha., 8.alpha.,8a.beta.)-}	1.0
334-88-3	Diazomethane	1.0
463-58-1	Carbonyl sulfide	1.0
492-80-8	C.I. Solvent Yellow 34* {Auramine}	0.1
505-60-2	Mustard gas {Ethane,1,1'-thiobis[2-chloro-}	0.1
510-15-6	Chlorobenzilate {Benzeneacetic acid,4-chloro-.alpha.-(4-chlorophenyl)-.alpha.-hydroxy-,ethyl ester}	1.0
532-27-4	2-Chloroacetophenone	1.0
534-52-1	4,6-Dinitro-o-cresol	1.0
540-59-0	1,2-Dichloroethylene	1.0
541-41-3	Ethyl chloroformate	1.0
541-73-1	1,3-Dichlorobenzene	1.0
542-75-6	1,3-Dichloropropylene	0.1
542-88-1	Bis(chloromethyl) ether	0.1
569-64-2	C.I. Basic Green 4*	1.0
584-84-9	Toluene-2,4-diisocyanate	0.1
593-60-2	Vinyl bromide	0.1
606-20-2	2,6-Dinitrotoluene	1.0
615-05-4	2,4-Diaminoanisole	0.1
621-64-7	N-Nitrosodi-n-propylamine	0.1
624-83-9	Methyl isocyanate	1.0
636-21-5	o-Toluidine hydrochloride	0.1
680-31-9	Hexamethylphosphoramide	0.1
684-93-5	N-Nitroso-N-methylurea	0.1
759-73-9	N-Nitroso-N-ethylurea	0.1
842-07-9	C.I. Solvent Yellow 14*	0.1
924-16-3	N-Nitrosodi-n-butylamine	0.1
961-11-5	Tetrachlorvinphos {Phosphonic acid, 2-chloro-1-(2,3,5-trichlorophenyl)ethenyl dimethyl ester}	1.0
989-38-8	C.I. Basic Red 1*	0.1
1120-71-4	Propane sultone	0.1
1163-19-5	Decabromodiphenyl oxide	1.0
1310-73-2	Sodium hydroxide (solution)	1.0
1313-27-5	Molybdenum trioxide	1.0
1314-20-1	Thorium dioxide	1.0

CAS Number	Chemical Name	De Minimis Concentration
1319-77-3	Cresol (mixed isomers)	1.0
1330-20-7	Xylene (mixed isomers)	1.0
1332-21-4	Asbestos (friable)	0.1
1335-87-1	Hexachloronaphthalene	1.0
1336-36-3	Polychlorinated biphenyls (PCBs)	0.1
1344-28-1	Aluminum oxide	1.0
1464-53-5	Diepoxybutane	0.1
1582-09-8	Trifluralin {Benzenamine, 2,6- dinitro-N,N-dipropyl-4-(trifluoromethyl)-}	1.0
1634-04-4	Methyl tert-butyl ether	1.0
1836-75-5	Nitrofen {Benzene, 2,4-dichloro-1-(4-nitrophenoxy)-}	0.1
1897-45-6	Chlorothalonil {1,3-Benzenedicar bonitrile, 2,4,5,6-tetrachloro-}	1.0
1937-37-7	C.I. Direct Black 38*	0.1
2164-17-2	Fluometuron {Urea, N,N-dimethyl-N'-[3-(trifluoromethyl)phenyl]-}	1.0
2234-13-1	Octachloronaphthalene	1.0
2303-16-4	Diallate {Carbamothioic acid, bis (1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester}	1.0
2602-46-2	C.I. Direct Blue 6*	0.1
2832-40-8	C.I. Disperse Yellow 3*	1.0
3118-97-6	C.I. Solvent Orange 7*	1.0
3761-53-3	C.I. Food Red 5*	0.1
4549-40-0	N-Nitrosomethylvinylamine	0.1
4680-78-8	C.I. Acid Green 3*	1.0
6484-52-2	Ammonium nitrate (solution)	1.0
7429-90-5	Aluminum (fume or dust)	1.0
7439-92-1	Lead	0.1
7439-96-5	Manganese	1.0
7439-97-6	Mercury	1.0
7440-02-0	Nickel	0.1
7440-22-4	Silver	1.0
7440-28-0	Thallium	1.0
7440-36-0	Antimony	1.0
7440-38-2	Arsenic	0.1
7440-39-3	Barium	1.0
7440-41-7	Beryllium	0.1
7440-43-9	Cadmium	0.1
7440-47-3	Chromium	0.1
7440-48-4	Cobalt	1.0
7440-50-8	Copper	1.0
7440-62-2	Vanadium (fume or dust)	1.0
7440-66-6	Zinc (fume or dust)	1.0
7550-45-0	Titanium tetrachloride	1.0
7647-01-0	Hydrochloric acid	1.0
7664-38-2	Phosphoric acid	1.0
7664-39-3	Hydrogen fluoride	1.0
7664-41-7	Ammonia	1.0
7664-93-9	Sulfuric acid	1.0
7697-37-2	Nitric acid	1.0
7723-14-0	Phosphorus (yellow or white)	1.0
7757-82-6	Sodium sulfate (solution)	1.0
7782-49-2	Selenium	1.0
7782-50-5	Chlorine	1.0
7783-20-2	Ammonium sulfate (solution)	1.0
8001-35-2	Toxaphene	0.1
10034-93-2	Hydrazine sulfate	0.1
10049-04-4	Chlorine dioxide	1.0
12122-67-7	Zineb {Carbamodithioic acid, 1,2-ethanediylbis-,zinc complex)	1.0
12427-38-2	Maneb {Carbamodithioic acid, 1,2-ethanediylbis-,manganese complex}	1.0
16071-86-6	C.I Direct Brown 95*	0.1
16543-55-8	N-Nitrosonornicotine	0.1
20816-12-0	Osmium tetroxide	1.0
25321-22-6	Dichlorobenzene (mixed isomers)	0.1
25376-45-8	Diaminotoluene (mixed isomers)	0.1
39156-41-7	2,4-Diaminoanisole sulfate	0.1

SECTION 313 CHEMICAL CATEGORIES

Section 313 requires emissions reporting on the chemical categories listed below, in addition to the specific chemicals listed above. The metal compounds listed below, unless otherwise specified, are defined as including any unique chemical substance that contains the named metal (i.e., antimony, copper, etc.) as part of that chemical's structure.

Chemical categories are subject to the 1 percent de minimis concentration unless the substance involved meets the definition of an OSHA carcinogen.

Antimony Compounds - Includes any unique chemical substance that contains antimony as part of that chemical's infrastructure.

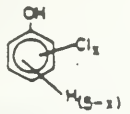
Arsenic Compounds - Includes any unique chemical substance that contains arsenic as part of that chemical's infrastructure.

Barium Compounds - Includes any unique chemical substance that contains barium as part of that chemical's infrastructure.

Beryllium Compounds - Includes any unique chemical substance that contains beryllium as part of that chemical's infrastructure.

Cadmium Compounds - Includes any unique chemical substance that contains cadmium as part of that chemical's infrastructure.

Chlorophenols -



where x = 1 to 5

Chromium Compounds - Includes any unique chemical substance that contains chromium as part of that chemical's infrastructure.

Cobalt Compounds - Includes any unique chemical substance that contains cobalt as part of that chemical's infrastructure.

Copper Compounds - Includes any unique chemical substance that contains copper as part of that chemical's infrastructure.

Cyanide Compounds - X^{+} CN^{-} where X = H^{+} or any other group where a formal dissociation may occur. For example KCN or $Ca(CN)_2$.

Glycol Ethers - Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol.

$R\text{-}(OCH_2CH_2)_n\text{-}OR'$
Where n = 1,2,or 3
R = alkyl or aryl groups
R' = R, H, or groups which, when removed, yield glycol ethers with the structure:
$R\text{-}(OCH_2CH_2)_n\text{-}OH$

Polymers are excluded from this category.

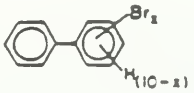
Lead Compounds - Includes any unique chemical substance that contains lead as part of that chemical's infrastructure.

Manganese Compounds - Includes any unique chemical substance that contains manganese as part of that chemical's infrastructure.

Mercury Compounds - Includes any unique chemical substance that contains mercury as part of that chemical's infrastructure.

Nickel Compounds - Includes any unique chemical substance that contains nickel as part of that chemical's infrastructure.

Polybrominated Biphenyls (PBBs)



where x = 1 to 10

Selenium Compounds - Includes any unique chemical substance that contains selenium as part of that chemical's infrastructure.

Silver Compounds - Includes any unique chemical substance that contains silver as part of that chemical's infrastructure.

Thallium Compounds - Includes any unique chemical substance that contains thallium as part of that chemical's infrastructure.

Zinc Compounds - Includes any unique chemical substance that contains zinc as part of that chemical's infrastructure.

*C.I. means "Color Index."

TABLE III

STATE ABBREVIATIONS

Alabama	AL	Montana	MT
Alaska	AK	Nebraska	NE
American Samoa	AS	Nevada	NV
Arizona	AZ	New Hampshire	NH
Arkansas	AR	New Jersey	NJ
California	CA	New Mexico	NM
Colorado	CO	New York	NY
Connecticut	CT	North Carolina	NC
Delaware	DE	North Dakota	ND
District of Columbia	DC	Commonwealth of the Northern Mariana Islands	MP
Florida	FL	Ohio	OH
Georgia	GA	Oklahoma	OK
Guam	GU	Oregon	OR
Hawaii	HI	Pennsylvania	PA
Idaho	ID	Puerto Rico	PR
Illinois	IL	Rhode Island	RI
Indiana	IN	South Carolina	SC
Iowa	IA	South Dakota	SD
Kansas	KS	Tennessee	TN
Kentucky	KY	Texas	TX
Louisiana	LA	Utah	UT
Maine	ME	Vermont	VT
Marshall Islands	MH	Virginia	VA
Maryland	MD	Virgin Islands	VI
Massachusetts	MA	Washington	WA
Michigan	MI	West Virginia	WV
Minnesota	MN	Wisconsin	WI
Mississippi	MS	Wyoming	WY
Missouri	MO		

ADDITIONAL MATERIALS AVAILABLE ON SECTION 313:

For copies of these materials, send in the request form included in the booklet or write to:

Section 313 Document Distribution Center
P.O. Box 12505
Cincinnati, OH 45212

❑ **Section 313 Rule** (FR Reprint)

A reprint of the final section 313 rule as it appeared in the Federal Register (FR) February 16, 1988.

❑ **TRI Magnetic Media Submission Guidance Package** (EPA 560/7-88-003)

Reports under section 313 may be submitted by computer tape or floppy disk. This guidance package gives the format requirements and other details for such submissions.

❑ **Toxic Chemical Release Inventory Questions and Answers** (EPA 560/4-89-002)

Answers to frequently asked questions about the section 313 rule, organized by subject area.

❑ **Section 313 Technical Questions and Answers Document**

❑ **Common Synonyms for Section 313 Chemicals** (OTS-ETD-001)

This document contains common synonyms for the specifically listed section 313 chemicals (synonyms for chemicals in covered categories are not included).

❑ **Comprehensive List of Chemicals Subject to Reporting Under the Act (Title III List of Lists)** (EPA 560/4-88-003)

A consolidated list of specific chemicals covered by the Emergency Planning and Community Right-to-Know Act. The list contains the chemical name, CAS Registry Number, and provides specific information on what reporting requirement(s) the chemical is subject to.

❑ **Supplier Notification Requirements Brochure** (EPA 560/4-88-008)

❑ **Trade Secrets Rule and Form** (FR Reprint)

A reprint of the final rule that appeared in the Federal Register of July 29, 1988. This rule implements the trade secrets provision of the Emergency Planning and Community Right-to-Know Act (Section 322). Includes a copy of the trade secret substantiation form.

❑ **Industry Specific Technical Guidance Documents**

The Agency has developed a group of smaller, individual guidance documents that target activities in industries who primarily process or use the listed toxic chemicals.

Also available:

❑ **Comprehensive List of Chemicals Subject to Reporting Under the Act (Title III List of Lists)**

Available as an IBM compatible disk from: The National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4650, Document Number: PB 88-193255, $50.00.

❑ **Estimating Releases and Waste Treatment Efficiencies for the Toxic Chemical Release Inventory** (EPA 560/4-88-002)

Suggested methods on the development of release estimates and waste treatment efficiency calculations required on Form R. Available from: Superintendent of Documents, Government Printing Office, Washington, DC 20402-9325, (202) 783-3238, Stock Number: 055-000-00270-3, $11.00.

APPENDIX A

EXAMPLE OF A COMPLETED FORM R FOR A HYPOTHETICAL FACILITY REPORTING UNDER TITLE III, SECTION 313

The following is a hypothetical example of how one manufacturer might complete the toxic chemical release inventory reporting Form R. The facility information is purely fictitious and does not represent any known manufacturing facility. The example begins with descriptions of the facility (a lead-acid storage battery manufacturer) and of the production process at the facility. The completion of each section of Form R is explained and a copy of Form R, as it would be completed by this facility, follows.

Facility Description

Your company manufactures lead-acid batteries at a plant in New Mexico. Your company also operates a lead smelter that produces lead ingots at another location in New Mexico and ships them to the battery plant. Lead scrap from the battery plant is returned to the smelter for recovery and reuse. The SIC code of the battery plant is 3691 (storage batteries); the SIC code for the smelter is 3341 (secondary smelting and refining of non-ferrous metals). A lead oxide production plant located adjacent to the battery plant, on the same property, also falls under SIC code 3691.

The lead oxide plant and the battery plant are considered, for the purposes of section 313 reporting requirements, to be a single facility. The facility is required to submit a completed Form R for each reported chemical or chemical category. Because activities at your facility involve both metallic lead and lead compounds (e.g., lead oxide), you may file a single reporting form for metallic lead (CAS number 7439-92-1) and a single form for lead compounds manufactured, processed, or used at your facility. Alternatively, and preferably, you may file one reporting form for all lead compounds (a single listed category under section 313) present at your facility, including metallic lead. In this example, metallic lead and all lead compounds are reported on a single reporting form.

Lead-acid batteries are produced using lead, sulfuric acid, additives such as antimony, and various other raw materials. Your facility's battery production capacity is 5000 batteries per day, and the facility normally operates 24 hours per day, 300 days per year. If sulfuric acid was manufactured, processed, or used at the battery plant in amounts that exceed the applicable thresholds, you would be required to report releases of sulfuric acid separately. Similarly, releases of lead and lead compounds from the remotely located lead smelter must be reported separately, if manufactured, processed, or used in amounts that exceed the thresholds.

Process Description

A lead-acid battery consists of a number of electrolytic cells, each containing an anode of porous lead, a cathode of primarily lead peroxide (PbO_2), and electrodes of metallic lead. The anode and cathode are separated by non-conducting material (e.g., plastic) and surrounded by an electrolytic (conductive) solution of sulfuric acid and water.

The first steps in the battery manufacturing process are grid casting and lead oxide (PbO) production. Lead ingots are melted and reformed by grid molding machines. The grids are ejected from the molds, trimmed, and stacked. Lead fumes from the lead melting and grid casting process are exhausted to the atmosphere without emission controls. The melting and casting process produces no wastewater.

The cast grids are made into battery anode and cathode plates by the application of a lead oxide paste of 70 percent lead oxide (PbO) and 30 percent metallic lead. Lead ingots are tumbled in a ball mill with air producing lead oxide and fine lead dust (referred to as "leady oxide"). Leady oxide particulates are entrained in the mill exhaust air, which is treated sequentially by a cyclone separator and fabric filter. The used fabric filter bags are shipped to a RCRA-permitted commercially operated hazardous waste landfill located in Colorado. The leady oxide production process does not produce wastewater.

The leady oxide is mixed with metallic lead, water, sulfuric acid, and additives in a paste mixer to form battery paste, which is applied to the lead grids to form battery plates. Lead and lead oxide dust are emitted from the paste mixer during charging of the dry materials, and from the mixer exhaust during wet mixing. The mixer is vented to a fabric filter during charging and to a wet scrubber during wet mixing. The fabric filter and wet scrubber vent to the same stack. The paste mixing and application process produces wastewater from the wet scrubber blowdown and also from washdown of the paste mixing equipment and mixing area. Scrubber blowdown is treated on-site. Solids collected in a scrubber sump are returned to the off-site smelter for recovery and reuse. Solids collected in an evaporation pond are not recovered. Washdown water is treated in a multi-stage settler and entirely reused in the paste mixing process. Sludge collected in the settler is recycled. Small amounts of particulates are released to the atmosphere during paste application. These emissions are not ducted to a stack or controlled.

The plates are then dried and cured under controlled temperature and humidity conditions. The plate drying and curing operation produces no wastewater or particulate emissions. Cured plates are sent to a three-process operation that involves manual separation of the plates, stacking them with non-conducting separators, and the welding on of metallic lead battery leads (pronounced "leeds") and lead terminals. The plates are then assembled into battery cases.

Particulate emissions of battery paste result from the manual separation, stacking, and handling of the battery plates. Lead fumes are emitted from the burning process. Exhaust gases from the three-process operation are treated by a fabric filter, and the collected particulates are returned to the smelter for recovery and reuse. The three-process operation produces no lead-containing wastewater, as only non-contact cooling water is used in the burning process. [Note: Even though lead is contained in the cooling water used by your facility (in the form of dissolved and suspended solids), you are not required to report releases of lead discharged with the cooling water because the lead is naturally occurring and not added in the battery production process.]

Sulfuric acid is added to the assembled batteries and the plates are formed within the batteries by applying electric voltage. The formation process oxidizes the lead oxide in the positive plates to lead peroxide and reduces the lead oxide in the negative plates to metallic lead. The charging process produces an acid mist that contains small amounts of lead particulate, which is released without emission controls.

Acid used in the formation process is removed from the batteries and reused. The batteries are washed, fresh acid is added, and the batteries are tested, re-washed, and inspected before being shipped to an on-site warehouse. The intermediate and final washes generate process wastewater, as do the battery repair and housekeeping (floor washing) operations. This wastewater is pretreated on-site and then piped to the local publicly owned treatment works (POTW).

Determining Reporting Requirements Under Section 313

To determine your eligibility for reporting under section 313, you must ascertain whether the total quantity of any listed chemical or chemical compound manufactured, processed, or used at your facility over the course of the calendar year exceeds any applicable threshold. For the facility described above, your determination of eligibility would proceed as follows. [Note: In determining eligibility, you will generate information you need to complete several portions of the form.]

Both lead (CAS number 7439-92-1) and lead compounds (a chemical category) are listed substances subject to reporting under section 313. You have decided that if any of the applicable thresholds are exceeded, you will report releases of both lead and lead compounds on the same reporting form under the listed chemical category "lead compounds." "Lead compounds" should be entered in Part III, Section 1.3, of the form. The CAS number for lead should not be entered, because that would imply that you are reporting only for lead. You should enter not applicable, NA, in the CAS number space.

According to the process description, the following activities take place at your facility involving lead and lead compounds:

- ❑ Your facility manufactures (produces) lead oxide (PbO) for on-site use/processing, which occurs in the production of lead oxide from metallic lead.
- ❑ Your facility processes metallic lead (Pb) as a reactant during lead oxide production.
- ❑ Your facility also processes metallic lead as an article component. This activity occurs at several points in the process, including during the addition of lead to the battery paste and the welding of metallic lead terminals and leads in the three-process operation.
- ❑ Your facility processes lead oxide as a reactant in the formation process, where the lead oxide in the positive battery plates is oxidized to lead peroxide.
- ❑ Your facility manufactures (produces) lead peroxide. This activity also occurs in the formation process, where lead oxide is oxidized to lead peroxide.

You must indicate all of the activities involving lead and lead compounds on Part III, Section 3, of the reporting form. (The attached completed form shows how information for this facility has been entered.)

Determining Reporting Eligibility. The manufacturing threshold quantity for the 1988 reporting year is 50,000 pounds; the threshold for processing is also 50,000 pounds. These thresholds drop to 25,000 pounds for the 1989 reporting year. Your facility both manufactures and processes, as it produces 1,500,000 batteries per year. Each battery contains 25 pounds of lead, half of which is in the form of metallic lead (anode) and half in the form of lead peroxide (cathode). The total amount of lead compounds manufactured during the reporting year is the 18,750,000 pounds of lead peroxide, which exceeds the threshold for manufacturing. Similarly, the amounts of lead processed as an article component (18,750,000 pounds) and of lead compounds processed (18,750,000 pounds) each exceed the threshold for processing. [Note: These amounts are not first combined before being compared to the processing threshold, because both lead and lead compounds are separately listed chemicals. If you added the amount of lead processed into lead oxide to that then processed into lead

peroxide, you would be double counting.] For sequential processes, use the amount of the final process material to determine whether the threshold is exceeded. Since your facility employs more than 10 people and falls within SIC codes 20-39, your facility must report under section 313. [Note: Once any of the applicable thresholds for lead compounds are exceeded, you are required to identify all manufacturing, processing, and use activities. You must report all releases of all lead compounds present at your facility, regardless of the activity from which they originate unless there is a specifically exempted use, such as the use of an article or use of water naturally containing lead.]

Calculating the Maximum Quantity of Lead and Lead Compounds. To calculate the maximum amount of lead and lead compounds present at your facility at any one time, you must consider all types of metallic lead and all types of lead compounds present at your facility, including stockpiled raw materials (i.e., lead ingots), lead and lead oxide present in process equipment (i.e., molten lead contained in the grid casting system, lead and lead oxide contained in the paste mixer), the inventory of metallic lead and lead peroxide contained in finished batteries stored on-site, and stockpiled lead scrap. Since the reporting form is being prepared for lead compounds, the maximum amount reported is the total of the inventories of these materials. The maximum amount of metallic lead (2,305,000 pounds), lead oxide (205,000 pounds), and lead peroxide (625,000 pounds) present at your facility is 3,135,000 pounds, which is between 1,000,000 and 9,999,999 pounds. You would therefore report range 06 on Part III, Section 4, of the reporting form.

Calculation of Releases of Lead

Releases to Air. In April 1988, you conducted stack tests to determine air releases from the battery facility. The release data provided baseline data for a proposed 1989 air emission reduction program. The tests were performed using EPA Reference Method 12, which determines exhaust concentrations as total elemental lead, and EPA Reference Methods 1-4, which determine total exhaust volumes. Releases from all stacks and vents at the facility were measured, including those from the following release points:

- ☐ Grid casting furnace and casting machine;
- ☐ Lead oxide mill fabric filter exhaust;
- ☐ Paste mixer wet scrubber exhaust;
- ☐ Paste mixer fabric filter exhaust; and
- ☐ Three process fabric filter exhaust.

Non-point (fugitive) air releases of lead, such as from the battery formation, grid paste application, and fabric filter dust handling areas were not determined as part of the stack testing program. These have been estimated by your facility's engineering department to be less than 100 pounds per year.

Measurements of the inlet lead concentrations to the wet scrubber or fabric filters were not performed. The process conditions (e.g., temperature, exhaust rate) of the grid casting furnace were changed significantly in June 1988 in response to the stack test results. Current lead releases are estimated by the engineering department to be 75 percent of those measured during the stack test.

The total releases to air from the facility must be entered in Part III, Section 5, of the form. The stack test results provide the concentration of metallic lead in each exhaust stream in grains per cubic foot and the exhaust rate in cubic feet per minute. You are required to report releases or release ranges in pounds per year. Using the appropriate conversion factors, knowing the scrubber efficiency (from the manufacturer's data), and assuming your facility operates 24 hours per day, 300 days per year, you can calculate the total lead releases from the stack test data. Because point (stack) releases of lead are 2400 lb/yr, which is greater than 999 lb/yr, you must enter the actual calculated amount in column A.2 of Section 5.2. Non-point (fugitive) air releases are 100 lb/yr (which is less than 999 lb/yr), so you may either enter the actual calculated amount in column A.2, or enter the appropriate range (1-499 lb/yr) in column A.1. The basis for the estimate of fugitive emissions, entered in column B of Section 5, is engineering calculations (code O). The basis for the estimate of stack emissions, entered in column B of Section 5, is monitoring data (code M). Although engineering calculations were used to estimate releases from the grid casting process, actual emissions test data were used to calculate more than 50 percent of the total stack emissions, so code M is appropriate.

Releases to Water. The only release of lead to a receiving stream or water body comes from stormwater. Lead ingots shipped from the off-site smelter are stored on a concrete pad in an open area at your facility. Lead dust is entrained in the stormwater runoff from the ingot storage area. You have monitoring data concerning the concentration of lead in stormwater releases from the facility property. Therefore, using precipitation volumes and run-off coefficients appropriate to the site, you are able to estimate that releases of lead compounds to the nearby stream total 6.2 pounds per year. Since the total quantity of lead released is less than 999 lb/yr, you may enter the actual amount calculated in column A.2 of Section 5.3.1a, or mark the applicable range (1-499 lb/yr) in column A.1, as is shown in the sample. Your facility has no process discharges to surface waters except stormwater. You must therefore report in Part III, Section 5.3.1c, that 100 percent of the lead released from your facility to surface water is from stormwater. The basis for the estimate of stormwater emissions, entered in column B of Section 5.3.1, is monitoring data (code M). The number for the receiving stream or water body you designated in Part I, Section 3.10 must be entered.

Wastewater from the grid paste application process is entirely recycled within the process after treatment in a multi-stage settler. Wastewater from the grid paste mixer wet scrubber is piped to an on-site surface impoundment and evaporated after treatment by a single-stage separator (settling tank) and pH adjustment for chemical precipitation. Wastewater from other process areas is treated in the wastewater pretreatment system and piped to the POTW. The following sections on Releases to Land and Discharge to POTW illustrate reporting of these wastes.

Releases to Underground Injection. Your facility performs no underground injection and therefore has no Underground Injection Well Code identification number. Not applicable, NA, should be entered in Part I, Section 3.11 and in column A.2 of Part III, Section 5.4.

Releases to Land. Wastewater from the grid paste mixing scrubber is discharged to a surface impoundment and evaporated. Although your facility historically has removed lead sludge from the surface impoundment each year, this has not been done for the past two years, as process changes have caused the sludge to accumulate more slowly than in previous years. Therefore, the impoundment must be considered an on-site land disposal unit, and releases to the impoundment must be reported in Part III, Section 5.5.1, of the form, and not in Part III, Section 5.3.

The facility wastewater monitoring program does not determine the concentration of lead and lead compounds in the scrubber discharge water, and releases to the surface impoundment (releases to land) must be calculated from material balance information. These releases to land are determined from the amount of lead removed by the scrubber (using the efficiency data provided by the scrubber manufacturer). The volume of the scrubber blowdown is found to be 1,500 pounds per year. Enter the estimate of the amount of lead and lead compounds released to surface impoundments in the space provided in Part III, Section 5.5.3 of the form. Because releases of lead to the surface impoundment are greater than 999 lb/yr, you must enter the actual calculated amount in column A.2 of Section 5.5.1. The basis for the estimate of releases to the impoundment, entered in column B of Section 5, is mass balance calculations (code C).

Calculation of Transfers of Lead to Off-Site Locations

Discharge to POTW. Wastewater from battery wash and battery repair operations at your plant is discharged to the local POTW. The discharge monitoring system data collected by your plant provide the concentration of metallic lead in each wastewater stream discharged to the POTW in milligrams/liter and the flow rate in liters per minute. Your facility also monitors the inlet concentration to the on-site wastewater treatment system to determine the treatment system efficiency. You are required to report releases or release ranges in pounds per year. Assuming your facility operates 24 hours a day, 300 days a year, using appropriate conversion factors and the monitoring data (i.e., lead concentrations and wastewater volumes), the release is calculated to be 11 pounds per year. The total releases to the POTW from the facility must be entered in Part III, Section 6.1, of the form. Because the releases of lead are less than 999 lb/yr, you may mark the appropriate range in column A.1 or enter the actual calculated amount in column A.2 of Section 6.1.1. You must report information concerning the multi-stage settler, single-stage settler, and pH adjustment (chemical precipitation) on Part III, Section 7, of the form, as these systems constitute wastewater treatment systems. You must also enter the name of the POTW in Part II, Section 1.1.

Transfers to Other Off-Site Locations. Your facility returns the lead particulate collected by the fabric filters to the off-site smelter for recovery and reuse. You are not required to report releases of listed substances to off-site recovery facilities; therefore, no information concerning the off-site smelter should be entered in Part III, Sections 6.2.1, 6.2.2, or 6.2.3, of the form. Your facility discharges used fabric filter bags contaminated with lead particulate to a commercial RCRA landfill located in Colorado. The RCRA I.D. number for the off-site facility is COD554698764. The plant engineering department estimates that the annual shipment of fabric filter bags contain less than 500 pounds of lead. You may therefore report the release as a range in column A.1 of Section 6.2.1. The basis for the estimate of solid waste emissions, entered in column B of Section 6.2.1, is engineering calculations (code O), and the location and RCRA I.D. number of the commercial landfill is entered in Part II, Section 2.1, of the form.

Estimation of Treatment System Efficiencies and Influent Concentrations

Information on the types of treatment systems and their treatment efficiencies is required to be entered in Part IV, Section 7, of the form. For air emission treatment systems use code A, for wastewater treatment systems use code W, and for solid waste treatment systems use code S in column 1 of Section 7 of the form. Table III of the instructions for Form R provides treatment codes to be entered in column B of Section 7.

Air Treatment Systems. Fabric filters and cyclone collectors are considered to be mechanical separation systems; the treatment code for these systems is A06. The treatment code for wet scrubbers is A03. Information on each air treatment system must be entered individually in Section 7. The cyclone collector and fabric filter on the lead oxide mill exhaust are considered to be sequential treatment systems, because both systems treat the same wastestream in sequence. Therefore, sequential treatment must be indicated for both systems in

Form Approved OMB No.: 2070-0093
Approval Expires: 01/91

(Important: Type or print; read instructions before completing form.)

EPA U.S. Environmental Protection Agency

TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM

Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act

EPA FORM **R**

PART I. FACILITY IDENTIFICATION INFORMATION

(This space for your optional use.)

Public reporting burden for this collection of information is estimated to vary from 30 to 34 hours per response with an average of 32 hours per response including time for reviewing instructions searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Chief, Information Policy Branch (PM-223), US EPA, 401 M St., SW, Washington, D.C. 20460 Attn: TR Burden and to the Office of Information and Regulatory Affairs, Office of Management and Budget Paperwork Reduction Project (2070-0093), Washington, D.C. 20603

1. 1.1 Are you claiming the chemical identity on page 3 trade secret? [ ] Yes (Answer question 1.2. Attach substantiation forms.) [X] No (Do not answer 1.2; Go to question 1.3.)

1.2 If "Yes" in 1.1, is this copy: [ ] Sanitized [ ] Unsanitized

1.3 Reporting Year: 19 88

2. CERTIFICATION (Read and sign after completing all sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:

Mr. Stanley L. Pirx, III, Vice President, Battery Products Division

Signature: Stanley L. Pirx, III

Date signed: February 12, 1989

3. FACILITY IDENTIFICATION

3.1 Facility or Establishment Name: Pirx-Lewis, Inc., Battery Products Div.

Street Address: 10545 Cerillos Road

City: Albuquerque

County: Bernadillo

State: NM

Zip Code: 81103-0420

WHERE TO SEND COMPLETED FORMS:

1. U.S. ENVIRONMENTAL PROTECTION AGENCY
P.O. BOX 70266
WASHINGTON, DC 20024-0266
ATTN: TOXIC CHEMICAL RELEASE INVENTORY
2. APPROPRIATE STATE OFFICE (See Instructions Appendix E)

3.2 This report contains information for (Check one): a. [X] An entire facility b. [ ] Part of a facility.

3.3 Technical Contact: Mr. Roberto Garcia — Telephone Number (include area code): (505) 752-5360

3.4 Public Contact: Ms. Sandy A. Range — Telephone Number (include area code): (505) 752-5363

3.5 SIC Code (4 digit): a. 3691 b. NA c. d. e. f.

3.6

Latitude			Longitude		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
35	10	00	106	30	00

3.7 Dun & Bradstreet Number(s): a. 91-976-2270 b. NA

3.8 EPA Identification Number(s) (RCRA I.D. No.): a. NMD919762270 b. NA

3.9 NPDES Permit Number(s): a. NA b.

3.10 Receiving Streams or Water Bodies (enter one name per box): a. Tijeros Arroyo b. NA c. d. e. f.

3.11 Underground Injection Well Code (UIC) Identification Number(s): a. NA b.

4. PARENT COMPANY INFORMATION

4.1 Name of Parent Company: Cibola Motor Works

4.2 Parent Company's Dun & Bradstreet Number: 91-783-4567

(Important: Type or print; read instructions before completing form.)

EPA

EPA FORM R

PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES

(This space for your optional use.)

1. PUBLICLY OWNED TREATMENT WORKS (POTWs)

1.1 POTW name		1.2 POTW name	
City of Albuquerque Treatment Works		NA	
Street Address		Street Address	
50100 U.S. Route 66			
City	County	City	County
Albuquerque	Bernadillo		
State	Zip	State	Zip
NM	87105-9987		

2. OTHER OFF-SITE LOCATIONS (DO NOT REPORT LOCATIONS TO WHICH WASTES ARE SENT ONLY FOR RECYCLING OR REUSE).

2.1 Off-site location name		2.2 Off-site location name	
Colorado Waste Disposal, Inc.			
EPA Identification Number (RCRA ID No.)		EPA Identification Number (RCRA ID No.)	
COD554698764		NA	
Street Address		Street Address	
10500 County Route 76			
City	County	City	County
Golden	Jefferson		
State	Zip	State	Zip
CO	80305-1311		
Is location under control of reporting facility or parent company?		Is location under control of reporting facility or parent company?	
[ ] Yes [X] No		[ ] Yes [ ] No	

2.3 Off-site location name		2.4 Off-site location name	
EPA Identification Number (RCRA ID No.)		EPA Identification Number (RCRA ID No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company?		Is location under control of reporting facility or parent company?	
[ ] Yes [ ] No		[ ] Yes [ ] No	

2.5 Off-site location name		2.6 Off-site location name	
EPA Identification Number (RCRA ID No.)		EPA Identification Number (RCRA ID No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company?		Is location under control of reporting facility or parent company?	
[ ] Yes [ ] No		[ ] Yes [ ] No	

[ ] Check if additional pages of Part II are attached. How many? _____

(Important: Type or print; read instructions before completing form.)

EPA

EPA FORM R

PART III. CHEMICAL-SPECIFIC INFORMATION

(This space for your optional use.)

1. CHEMICAL IDENTITY (Do not complete this section if you complete Section 2.)

1.1 [Reserved]

1.2 CAS Number (Enter the number exactly as it appears on the 313 list. Enter NA if reporting a chemical category.)
NA

1.3 Chemical or Chemical Category Name (Enter the name exactly as it appears on the 313 list.)
Lead Compounds

1.4 Generic Chemical Name (Complete only if Part I, Section 1.1 is checked "Yes." Generic name must be structurally descriptive.)

2. MIXTURE COMPONENT IDENTITY (Do not complete this section if you complete Section 1.)

2. Generic Chemical Name Provided by Supplier (Limit the name to a maximum of 70 characters (e.g., numbers, letters, spaces, punctuation).)

3. ACTIVITIES AND USES OF THE CHEMICAL AT THE FACILITY (Check all that apply.)

3.1 Manufacture the chemical: a [X] Produce; b [ ] Import
If produce or import: c [X] For on-site use/processing; d [ ] For sale/distribution; e [ ] As a byproduct; f [ ] As an impurity

3.2 Process the chemical: a [X] As a reactant; b [ ] As a formulation component; c [X] As an article component; d [ ] Repackaging only

3.3 Otherwise use the chemical: a [ ] As a chemical processing aid; b [ ] As a manufacturing aid; c [ ] Ancillary or other use

4. MAXIMUM AMOUNT OF THE CHEMICAL ON-SITE AT ANY TIME DURING THE CALENDAR YEAR

[0][6] (enter code)

5. RELEASES OF THE CHEMICAL TO THE ENVIRONMENT ON-SITE

You may report releases of less than 1,000 lbs by checking ranges under A.1. (Do not use both A.1 and A.2)

		A. Total Release (lbs/yr) A.1 Reporting Ranges 0 / 1–499 / 500–999	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. % From Stormwater
5.1 Fugitive or non-point air emissions	5.1a	[ ] [X] [ ]		5.1b [O]	
5.2 Stack or point air emissions	5.2a	[ ] [ ] [ ]	2400	5.2b [M]	
5.3 Discharges to receiving streams or water bodies — 5.3.1 [A]	5.3.1a	[ ] [X] [ ]		5.3.1b [M]	5.3.1c 100
(Enter letter code from Part I, Section 3.10 for stream(s) in the box provided.) — 5.3.2 [ ]	5.3.2a	[ ] [ ] [ ]	NA	5.3.2b [ ]	5.3.2c NA
5.3.3 [ ]	5.3.3a	[ ] [ ] [ ]		5.3.3b [ ]	5.3.3c
5.4 Underground injection	5.4a	[ ] [ ] [ ]	NA	5.4b [ ]	
5.5 Releases to land					
5.5.1 On-site landfill	5.5.1a	[ ] [ ] [ ]	NA	5.5.1b [ ]	
5.5.2 Land treatment/application farming	5.5.2a	[ ] [ ] [ ]	NA	5.5.2b [ ]	
5.5.3 Surface impoundment	5.5.3a	[ ] [ ] [ ]	1500	5.5.3b [C]	
5.5.4 Other disposal	5.5.4a	[ ] [ ] [ ]	NA	5.5.4b [ ]	

[ ] (Check if additional information is provided on Part IV–Supplemental Information.)

(Important: Type or print, read instructions before completing form.)

EPA

EPA FORM R

PART III. CHEMICAL-SPECIFIC INFORMATION (continued)

(This space for your optional use.)

6. TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS

You may report transfers of less than 1,000 lbs. by checking ranges under A.1 (Do not use both A.1 and A.2)	A. Total Transfers (lbs/yr) A.1 Reporting Ranges 0 / 1-499 / 500-999	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
6.1.1 Discharge to POTW (enter location number from Part II, Section 1.) [1][1]	[ ] [x] [ ]		6.1.1b [M]	
6.2.1 Other off-site location (enter location number from Part II, Section 2.) [2][1]	[ ] [x] [ ]		6.2.1b [O]	6.2.1c [M][7][2]
6.2.2 Other off-site location (enter location number from Part II, Section 2.) [2][ ]	[ ] [ ] [ ]	NA	6.2.2b [ ]	6.2.2c [M][ ][ ]
6.2.3 Other off-site location (enter location number from Part II, Section 2.) [2][ ]	[ ] [ ] [ ]		6.2.3b [ ]	6.2.3c [M][ ][ ]

[ ] (Check if additional information is provided on Part IV-Supplemental Information.)

7. WASTE TREATMENT METHODS AND EFFICIENCY

A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes / No
7.1a [A]	7.1b [A][0][6]	7.1c [3]	7.1d [x]	7.1e NA %	7.1f [ ] [ ]
7.2a [A]	7.2b [A][0][6]	7.2c [ ]	7.2d [x]	7.2e 99.5 %	7.2f [ ] [x]
7.3a [A]	7.3b [A][0][6]	7.3c [3]	7.3d [ ]	7.3e 98.0 %	7.3f [ ] [x]
7.4a [A]	7.4b [A][0][3]	7.4c [3]	7.4d [ ]	7.4e 90.0 %	7.4f [ ] [x]
7.5a [A]	7.5b [A][0][6]	7.5c [3]	7.5d [ ]	7.5e 98.0 %	7.5f [ ] [x]
7.6a [W]	7.6b [P][1][1]	7.6c [2]	7.6d [x]	7.6e NA %	7.6f [ ] [ ]
7.7a [W]	7.7b [C][0][1]	7.7c [ ]	7.7d [x]	7.7e NA %	7.7f [ ] [ ]
7.8a [W]	7.8b [P][9][9]	7.8c [ ]	7.8d [x]	7.8e 100 %	7.8f [x] [ ]
7.9a [W]	7.9b [P][1][1]	7.9c [2]	7.9d [x]	7.9e NA %	7.9f [ ] [ ]
7.10a [W]	7.10b [R][9][9]	7.10c [ ]	7.10d [x]	7.10e 100 %	7.10f [x] [ ]

[x] (Check if additional information is provided on Part IV-Supplemental Information.)

8. OPTIONAL INFORMATION ON WASTE MINIMIZATION

(Indicate actions taken to reduce the amount of the chemical being released from the facility. See the instructions for coded items and an explanation of what information to include.)

A. Type of Modification (enter code)	B. Quantity of the Chemical in Wastes Prior to Treatment or Disposal: Current reporting year (lbs/yr)	Prior year (lbs/yr)	Or percent change	C. Index	D. Reason for Action (enter code)
[M][2]	121,700	121,800	%	[1].[0]	[R][2]

(Important: Type or print; read instructions before completing form.)

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EPA FORM R

PART IV. SUPPLEMENTAL INFORMATION

Use this section if you need additional space for answers to questions in Part III. Number the lines used sequentially from lines in prior sections (e.g., 5.3.4, 6.1.2, 7.11)

(This space for your optional use)

ADDITIONAL INFORMATION ON RELEASES OF THE CHEMICAL TO THE ENVIRONMENT ON-SITE (Part III, Section 5.3)

You may report releases of less than 1,000 lbs. by checking ranges under A.1. (Do not use both A.1 and A.2)	A. Total Release (lbs/yr) A.1 Reporting Ranges 0 / 1–499 / 500–999	A. Total Release (lbs/yr) A.2 Enter Estimate	B. Basis of Estimate (enter code in box provided)	C. % From Stormwater
5.3 Discharges to receiving streams or water bodies 5.3.___	5.3.___a [ ] [ ] [ ]		5.3.___b	5.3.___c
(Enter letter code from Part II Section 3.10 for stream(s) in the box provided.) 5.3.___	5.3.___a [ ] [ ] [ ]		5.3.___b	5.3.___c
5.3.___	5.3.___a [ ] [ ] [ ]		5.3.___b	5.3.___c

ADDITIONAL INFORMATION ON TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS (Part III, Section 6)

You may report transfers of less than 1,000 lbs. by checking ranges under A.1. (Do not use both A.1 and A.2)	A. Total Transfers (lbs/yr) A.1 Reporting Ranges 0 / 1–499 / 500–999	A. Total Transfers (lbs/yr) A.2 Enter Estimate	B. Basis of Estimate (enter code in box provided)	C. Type of Treatment/ Disposal (enter code in box provided)
6.1.___ Discharge to POTW (enter location number from Part II Section 1.) 1	[ ] [ ] [ ]		6.1.___b	
6.2.___ Other off-site location (enter location number from Part II Section 2.) 2	[ ] [ ] [ ]		6.2.___b	6.2.___c M
6.2.___ Other off-site location (enter location number from Part II Section 2.) 2	[ ] [ ] [ ]		6.2.___b	6.2.___c M
6.2.___ Other off-site location (enter location number from Part II Section 2.) 2	[ ] [ ] [ ]		6.2.___b	6.2.___c M

ADDITIONAL INFORMATION ON WASTE TREATMENT METHODS AND EFFICIENCY (Part III, Section 7)

A. General Wastestream (enter code in box provided)	B. Treatment Method (enter code in box provided)	C. Range of Influent Concentrations (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes / No
7.11.a W	7.11.b C 0 1	7.11.c 3	7.11.d [x]	7.11.e NA %	7.11.f [ ] [ ]
7.12.a W	7.12.b P 1 2	7.12.c	7.12.d [x]	7.12.e 85.0%	7.12.f [x] [ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ] [ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ] [ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ] [ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ] [ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ] [ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ] [ ]
7.___a	7.___b	7.___c	7.___d [ ]	7.___e %	7.___f [ ] [ ]

APPENDIX B

HOW TO DETERMINE LATITUDE AND LONGITUDE FROM TOPOGRAPHIC MAPS

Latitude is the distance north or south of the equator. Longitude is the distance east or west of the prime meridian (Greenwich, England). Latitude and longitude are measured in seconds, minutes, and degrees.

60" (seconds) = 1' (minute)
60' (minutes) = 1° (degree)

To determine the latitude and longitude of your facility you will need the following:

- ❑ Topographic map from United States Geological Survey (USGS)
- ❑ Ruler graduated in decimal units (cm or inches)
- ❑ Pencil
- ❑ Small calculator (optional).

How to Obtain USGS Maps

USGS maps used for determining latitude and longitude may be obtained from the USGS distribution center. These maps are available in both the 7.5 minute and 15 minute series. For maps of the United States, including Alaska, Hawaii, American Samoa, Guam, Puerto Rico, and the U.S. Virgin Islands, contact:

Branch of Distribution
U.S. Geological Survey
Box 25286 Federal Center
Denver, CO 80225

If you are not sure on which map your site is located, consult an index to topographic maps for your state, which USGS will provide free of charge. USGS maps cost about $3.00 and are often available in local libraries and at commercial dealers such as surveyors or outdoor recreation equipment dealers. The index for your state lists these alternative sources for obtaining maps. If you need help in determining your facility's latitude and longitude, the National Cartographic Information Center located in Denver can provide assistance. The Center can be contacted at (303) 236-5829.

Determining Your Facility's Latitude and Longitude

(See diagram next page.)

Once you have obtained the correct map for your facility, follow these steps:

1. Mark the location of your facility on the map with a point. If your facility is large, choose a point central to the production activities of the facility. If certain structures in your facility are represented on the map, mark one of the structures with a point.

2. Construct a small quadrangle (a four-sided figure) around the point with fine pencil lines connecting the nearest 2 1/2' or 5' graticules. Graticules are intersections of latitude and longitude lines that are marked on the map edge, and appear as black crosses at four points in the interior of the map.

3. Read and record the latitude and longitude for the southeast corner of the small quadrangle drawn in step two. The latitude and longitude are printed at the edges of the map.

4. To determine the increment of latitude above the latitude line recorded in step 3,

   - position the map so that you face its west edge;
   - place the ruler in approximately a north-south alignment, with the "0" on the latitude line recorded in step 3 and the edge intersecting the point.

   Without moving the ruler, read and record:

   - the measurement from the latitude line to the desired point (the point distance);
   - the measurement from the latitude line to the north line of the small quadrangle (the total distance).

   Determine the number of seconds to be added to the latitude recorded in step 3 by using the ratio:

$$\left[\frac{\text{Point distance}}{\text{Total distance between lines}}\right] \times 150'' = \text{increment of latitude}$$

[Note: 150" is the number of seconds of arc for the side of the small quadrangle on a 7.5' map. If you are using a 15' map, the multiplication factor is 300" instead of 150" since each graticule is 5' of latitude or longitude.]

For example:

Point distance = 99.5
Total distance = 192.0

$\frac{99.5}{192.0} \times 150' = 77.7' = 01'17.7"$

(60" = 1'; 77.7" - 60" = 01'17.7")

Latitude in step 3 : 32°17'30"
Increment : + 01'17.7"
Latitude of point : 32°18'47.7"

to the nearest second = 32°18'48"

5 . To determine the increment of longitude west of the longitude line recorded in step 3,

- position the map so that you face its south edge;
- place the ruler in approximately an east-west alignment with the "0" on the longitude line recorded in step 3 and the edge intersecting the point.

Without moving the ruler, read and record:

- the measurement from the longitude line to the desired point (the point distance);
- the measurement from the longitude line to the west line of the small quadrangle (the total distance).

Determine the number of seconds to be added to the longitude recorded in step 3 by using the ratio:

$$\left[\frac{\text{Point distance}}{\text{Total distance between lines}}\right] \times 150" = \text{increment of longitude}$$

For example:

Point distance = 65.0
Total distance = 149.9

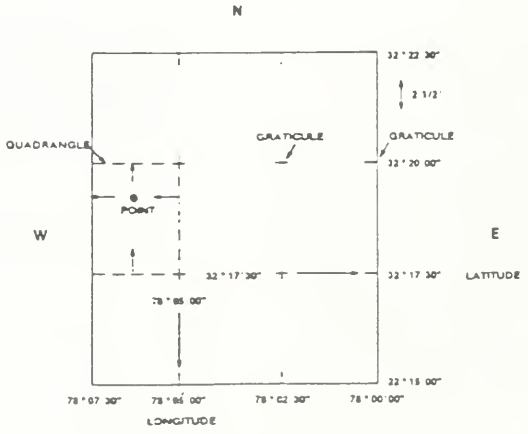
$\frac{65.0}{149.9} \times 150" = 66.4" = 01'06.4"$

(60" = 1'; 66.4" - 60" = 01'06.4")

Longitude in step 4 : 78°05'00"
Increment : + 01'06.4"
Longitude of point : 78°06'06.4"

to the nearest second = 78°06'06"

Latitude/Longitude Diagram



Point: Latitude 32° 18'48" North
Longitude 78° 06'06" West

Note: This diagram is based on a USGS 7.5 Minute Series Topographic Map.
Not drawn to scale.

APPENDIX C

WORKSHEET FOR PERFORMING THRESHOLD DETERMINATIONS

1. Identify all chemicals used on-site. This survey will include all chemicals purchased, produced, present as impurities/by-products, intermediate chemicals, and chemicals produced during waste treatment. Sources of information on chemicals used are:

   ❑ Purchasing department, which should have a list of all items the facility has purchased; and

   ❑ Process engineers, production supervisors, maintenance supervisors, and plant managers, who can identify the purchased items that are actually chemicals and other chemicals used which may not enter the plant as purchased items, such as by-products, impurities, intermediates, or chemicals formed as part of a waste treatment process.

2. Determine what the chemical is used for from the personnel in the operation actually using the chemical. If the chemical is used for routine janitorial services, operation or maintenance or transportation equipment, or is used in the laboratory under the supervision of qualified personnel it should be excluded from threshold determinations.

3. Fill in columns A, B, and C of Table I for all chemicals or mixtures containing section 313 chemicals identified in Step I and not excluded from Step 2. For purchased chemicals, the material safety data sheet (MSDS) may have a list of all components which are section 313 chemicals. For chemicals or mixtures generated on-site, the process personnel may be able to provide compositions. Several points to remember:

   ❑ Check MSDSs for impurities which may also be section 313 chemicals;

   ❑ The section 313 chemical list is <u>not</u> the same as toxic chemical lists developed by OSHA or other agencies;

   ❑ For chemicals which are only reportable if they are in solution form, only the weight of the chemical is used in threshold determination, not the weight of the solution;

   ❑ For compounds containing metals, the weight of the <u>compound</u> is used, not the weight of the parent metal; and

   ❑ Do not perform threshold determinations or report chemicals which are not on the section 313 list.

   For pure components, columns A and B may be identical. For mixtures, there may be multiple entries in column B if the mixture contains more than one section 313 chemical.

4. Determine the amount of the chemical or mixture used by filling the appropriate columns in Table 2 based on the data you have available and what data you believe to be the most accurate. If a chemical/mixture has multiple uses (e.g., it is produced and otherwise used), do separate estimates for the different uses and make two entries for this chemical/mixture in Table 1.

   If a basis other than purchases/inventories or production rate is used, attach calculations showing how the use was derived to Table 2.

5. Calculate values for column E for each specific chemical compound or category present in the mixture. For pure compounds, columns D and E will have the same value.

6. Determine the type of use and mark the appropriate column (i.e., M = manufacture, P = processed, O = otherwise used).

7. Complete Table 3. Take values from column E for each specific chemical and sum them. Do separate calculations for chemicals with different uses.

8. From Table 3 identify all chemicals which exceed the applicable threshold. Points to remember:

   ❑ For chemicals with multiple uses, if you exceed any threshold then the chemicals must be reported.

   ❑ For metals, use the mass of the metal compound.

   ❑ For solutions, use the weight of the chemical, not the solution.

   ❑ If a specific chemical belongs in a chemical category, other chemicals in that category should be included as part of the general category.

9. As a final reminder, did you:

   ❑ Check with all plant personnel who may purchase or use chemicals?

   ❑ Review MSDSs for all purchased chemicals?

   ❑ Check MSDSs of commercial grade chemicals to determine if any impurities/by-products are present?

   ❑ Check to determine if a particular chemical has multiple uses?

   ❑ Identify all chemicals produced by your process, either

intentionally (products or intermediates) or unintentionally?

❑ Retain all notes, calculations, and other materials necessary to support use estimates?

TABLE 1. THRESHOLD DETERMINATION CALCULATIONS

A	B	C	D	E = C x D / 100			
Mixture or Chemical Name	Section 313 Chemical or Chemical Category Present	Weight Percent	Amount of Chemical/ Mixture used In 1988 (from Table 2)	Amount of Section 313 Chemical Used	Type of Use* M	P	O

* Refer to pages 5-6 of the Instructions for an explanation of how uses are defined. M = manufactured; P = processed; O = otherwise used.

RETAIN THIS TABLE AS DOCUMENTATION OF FORM R REPORTS - DO NOT SUBMIT WITH FORM R

TABLE 2. USE CALCULATIONS

	Based on Purchases/Inventories					Based on Production			Other Basis[b]
	A	B	C=B-A	D	C+D	E	F	G=ExF	
Mixture[a] or Chemical	Beginning Inventory	Ending Inventory	Inventory Difference	Purchase	Total Used	Amount Used per Unit of Product	Amount of Product Produced	Amount Used	Amount Used

[a] From Column A, Table 1.
[b] Attach supporting documentation of how these values are determined.

RETAIN THIS TABLE AS DOCUMENTATION OF FORM R REPORT - DO NOT SUBMIT WITH FORM R

TABLE 3. SUMMARY OF AMOUNTS OF CHEMICALS USED

Section 313 Chemical	Amount * Used (1b)	Type of Use (M, P, O)

* Sum of all values in Column E of Table 1 for this chemical or chemical category for each type of use.

RETAIN THIS TABLE AS DOCUMENTATION OF FORM R REPORTS - DO NOT SUBMIT WITH FORM R

APPENDIX D

REPORTING CODES FOR EPA FORM R

Part III, Section 4 - Maximum Amount of the Chemical On-Site at Any Time During the Calendar Year

Weight Range in Pounds

Range Code	From...	To...
01	0	99
02	100	999
03	1,000	9,999
04	10,000	99,999
05	100,000	999,999
06	1,000,000	9,999,999
07	10,000,000	49,999,999
08	50,000,000	99,999,999
09	100,000,000	499,999,999
10	500,000,000	999,999,999
11	1 billion	more than 1 billion

Part III, Section 5 - Releases of the Chemical to the Environment On-Site and Section 6 - Transfers of the Chemical in Waste to Off-Site Locations

M - Estimate is based on monitoring data or measurements for the toxic chemical as released to the environment and/or off-site facility.

C - Estimate is based on mass balance calculations, such as calculation of the amount of the toxic chemical in streams entering and leaving process equipment.

E - Estimate is based on published emission factors, such as those relating release quantity to through-put or equipment type (e.g., air emission factors).

O - Estimate is based on other approaches such as engineering calculations (e.g., estimating volatilization using published mathematical formulas) or best engineering judgment. This would include applying an estimated removal efficiency to a waste stream, even if the composition of the stream before treatment was fully characterized by monitoring data.

Part III, Section 6 - Transfers of the Chemical in Waste to Off-Site Locations

Type of Treatment/Disposal

M10 Storage Only
M40 Solidification/Stabilization
M50 Incineration/Thermal Treatment
M61 Wastewater Treatment (Excluding POTW)
M69 Other Treatment
M71 Underground Injection
M72 Landfill/Disposal Surface Impoundment
M73 Land Treatment
M79 Other Land Disposal
M90 Other Off-Site Management
M91 Transfer to Waste Broker
M99 Unknown

Part III, Section 7 - Waste Treatment Methods and Efficiency

General Waste Stream

A = Gaseous (gases, vapors, airborne particulates)
W = Wastewater (aqueous waste)
L = Liquid waste (non-aqueous waste)
S = Solid waste (including sludges and slurries)

Part III, Section 7 - Waste Treatment Methods and Efficiency

Air Emissions Treatment

A01 Flare
A02 Condenser
A03 Scrubber
A04 Absorber
A05 Electrostatic Precipitator
A06 Mechanical Separation
A07 Other Air Emission Treatment

Biological Treatment

B11 Biological Treatment -- Aerobic
B21 Biological Treatment -- Anaerobic
B31 Biological Treatment -- Facultative
B99 Biological Treatment -- Other

Chemical Treatment

C01 Chemical Precipitation -- Lime or Sodium Hydroxide
C02 Chemical Precipitation -- Sulfide
C09 Chemical Precipitation -- Other
C11 Neutralization
C21 Chromium Reduction
C31 Complexed Metals Treatment (other than pH Adjustment)
C41 Cyanide Oxidation -- Alkaline Chlorination
C42 Cyanide Oxidation -- Electrochemical

C43 Cyanide Oxidation -- Other
C44 General Oxidation (including Disinfection) -- Chlorination
C45 General Oxidation (including Disinfection) -- Ozonation
C46 General Oxidation (including Disinfection) -- Other
C99 Other Chemical Treatment

Incineration/Thermal Treatment

F01 Liquid Injection
F11 Rotary Kiln with Liquid Injection Unit
F19 Other Rotary Kiln
F31 Two Stage
F41 Fixed Hearth
F42 Multiple Hearth
F51 Fluidized Bed
F61 Infra-Red
F71 Fume/Vapor
F81 Pyrolytic Destructor
F82 Wet Air Oxidation
F83 Thermal Drying/Dewatering
F99 Other Incineration/Thermal Treatment

Physical Treatment

P01 Equalization
P09 Other Blending
P11 Settling/Clarification
P12 Filtration
P13 Sludge Dewatering (non-thermal)
P14 Air Flotation
P15 Oil Skimming
P16 Emulsion Breaking -- Thermal
P17 Emulsion Breaking -- Chemical
P18 Emulsion Breaking -- Other
P19 Other Liquid Phase Separation
P21 Adsorption -- Carbon
P22 Adsorption -- Ion Exchange (other than for recovery/reuse)
P23 Adsorption -- Resin
P29 Adsorption -- Other
P31 Reverse Osmosis (other than for recovery/reuse)
P41 Stripping -- Air
P42 Stripping -- Steam
P49 Stripping -- Other
P51 Acid Leaching (other than for recovery/reuse)
P61 Solvent Extraction (other than recovery/reuse)
P99 Other Physical Treatment

Recovery/Reuse

R01 Reuse as Fuel -- Industrial Kiln
R02 Reuse as Fuel -- Industrial Furnace
R03 Reuse as Fuel -- Boiler
R04 Reuse as Fuel -- Fuel Blending
R09 Reuse as Fuel -- Other
R11 Solvents/Organics Recovery -- Batch Still Distillation
R12 Solvents/Organics Recovery -- Thin-Film Evaporation
R13 Solvents/Organics Recovery -- Fractionation
R14 Solvents/Organics Recovery -- Solvent Extraction
R19 Solvents/Organics Recovery -- Other
R21 Metals Recovery -- Electrolytic
R22 Metals Recovery -- Ion Exchange
R23 Metals Recovery -- Acid Leaching
R24 Metals Recovery -- Reverse Osmosis
R26 Metals Recovery -- Solvent Extraction
R29 Metals Recovery -- Other
R99 Other Reuse or Recovery

Solidification/Stabilization

G01 Cement Processes (including Silicates)
G09 Other Pozzolonic Processes (including Silicates)
G11 Asphaltic Processes
G21 Thermoplastic Techniques
G99 Other Solidification Processes

Part III, Section 7 - Waste Treatment Methods and Efficiency

Range of Influent Concentration

1 = Greater than 1 percent
2 = 100 parts per million (0.01 percent) to 1 percent (10,000 parts per million)
3 = 1 part per million to 100 parts per million
4 = 1 part per billion to 1 part per million
5 = Less than 1 part per billion

[Note: Parts per million (ppm) is milligrams/kilogram (mass/mass) for solids and liquids; cubic centimeters/cubic meter (volume/volume) for gases; milligrams/liter for solutions or dispersions of the chemical in water; and milligrams of chemical/kilogram of air for particulates in air. If you have particulate concentrations (at standard temperature and pressure) as grains/cubic foot of air, multiply by 1766.6 to convert to parts per million; if in milligrams/cubic meters, multiply by 0.773 to obtain parts per million. Factors are for standard conditions of 0°C (32°F) and 760 mmHg atmospheric pressure.]

Part III, Section 8 - Optional Information on Waste Minimization

Type of Modification

M1 - Recycling/Reuse On-Site
M2 - Recycling/Reuse Off-Site
M3 - Equipment/Technology Modifications

M4 - Process Procedure Modifications
M5 - Reformulation/Redesign of Product
M6 - Substitution of Raw Materials
M7 - Improved Housekeeping, Training, Inventory Control
M8 - Other Waste Minimization Technique

Reason for Action

R1 - Regulatory Requirement for the Waste
R2 - Reduction of Treatment/Disposal Costs
R3 - Other Process Cost Reduction
R4 - Self-Initiated Review
R5 - Other (e g., discontinuation of product, occupational safety, etc.)

APPENDIX E

STATE DESIGNATED SECTION 313 CONTACTS

[Note: Use the appropriate address for submission of Form R reports to your State.]

Alabama
Mr. E. John Williford, Chief of Operations
Alabama Emergency Response Commission
Alabama Department of Environmental Management
Field Operations Division
1751 Congressman W.G. Dickinson Drive
Montgomery, AL 36109
(205) 271-7700

Alaska
Ms. Amy Kyle, Chairman
Alaska Emergency Response Commission
Department of Environmental Conservation
P.O. Box 0
Juneau, AK 99811
(907) 465-2600

American Samoa
Mr. Pati Faiai, Director
American Samoa EPA
Office of the Governor
Pago Pago, AS 96799
International Number (684) 633-2682

Arizona
Mr. Carl F. Funk, Executive Director
Arizona Emergency Response Commission
5636 East McDowell Road
Phoenix, AZ 85008
(602) 244-0504

Arkansas
Ms. Becky Bryant
Depository of Documents
Arkansas Department of Labor
10421 West Markham
Little Rock, AR 72205
(501) 682-4534

California
Mr. Charles M. Shulock
Office of Environmental Affairs
P.O. Box 2815
Sacramento, CA 95812
Attn: Section 313 Reports
(916) 324-8124
(916) 322-7236 (Completed Form R information)

Colorado
Colorado Emergency Planning Commission
Colorado Department of Health
Division of Hazardous Materials and Waste Management
4210 East 11th Avenue
Denver, CO 80220
Ms. Pam Harley (303) 331-4858
Mr. Richard Bardsley (303) 273-1789

Commonwealth of the Northern Marianas Islands
Mr. Russell Meecham, ■
Division of Environmental Quality
P.O. Box 1304
Saipan, MP 96950
(670) 234-6984

Connecticut
Ms. Sue Vaughn
State Emergency Response Commission
Department of Environmental Protection
Room 161
165 Capitol Avenue
Hartford, CT 06106
(203) 566-4856

Delaware
Mr. Phillip G. Retallick
Division of Air and Waste Management
Department of Natural Resources and Environmental Control
Richardson and Robbins Building
89 Kings Highway
Dover, DE 19901
(302) 736-4764

District of Columbia
Ms. Pamela Thurber
Environmental Planning Specialist
Office of Emergency Preparedness
2000 14th Street, NW, 8th Floor
Washington, DC 20009
(202) 727-6161

Florida
Mr. Thomas G. Pelham, Chairman
Florida Emergency Response Commission
Secretary, Florida Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2149
(904) 487-1472
(in Florida 800-635-7179)

Georgia
Mr. Jimmy Kirkland
Georgia Department of Natural Resources
205 Butler Street, S.E.
Floyd Tower East
Atlanta, GA 30334
(404) 656-6905

Guam
Mr. Charles P. Crisostomo
Guam EPA
P.O. Box 2999
Agana, GU 96910
(671) 646-8863

Hawaii
Dr. John C. Lewin, M.D., Director
Hawaii State Department of Health
P.O. Box 3378
Honolulu, HI 96801-9904
(808) 548-6505

Idaho
Ms. Jennie Records, Program Coordinator
Idaho Emergency Response Commission
State House
Boise, ID 83720
(208) 334-5898

Illinois
Mr. Joe F. Goodner, P.E.
Emergency Planning Unit
Illinois EPA
P.O. Box 19276
2200 Churchill Road
Springfield, IL 62794-9276
(217) 782-3637

Indiana
Mr. Philip Powers, Director
Indiana Department of Environmental Management
Emergency Response Branch
5500 West Bradbury Avenue
Indianapolis, IN 46241
(317) 243-5176
(317) 243-5147 (General information only)

Iowa
Mr. Jim Taylor
Iowa Emergency Response Commission
301 East 7th Street
Des Moines, IA 50319
(515) 281-6175

Kansas
Right-to-Know Program
Kansas Department of Health and Environment
Building 740, Forbes Field
Topeka, KS 66620-7430
(913) 296-1690

Kentucky
Ms. Valerie Hudson
Kentucky Department of Environmental Protection
18 Reilly Road
Frankfort, KY 40601
(502) 564-2150

Louisiana
Mr. R. Bruce Hammatt
Emergency Response Coordinator
Department of Environmental Quality
P.O. Box 44091
Baton Rouge, LA 70804-4091
(504) 342-6363

Maine
Mr. David Brown, Director
State Emergency Response Commission
State House Station 72
State Office Building
Augusta, ME 04333
(207) 289-4080
(In Maine 800-452-8735)

Maryland
Ms. Masha Ways
Toxics Information Center
SARA Title III
c/o Maryland Department of the Environment
O'Conor State Office Building
2500 Broening Highway
Baltimore, MD 21224
(301) 631-3800

Massachusetts
Mr. Arnold Sapenter
c/o Title III Emergency Response Commission
Department of Environmental Quality Engineering
One Winter Street, 10th Floor
Boston, MA 02108
(617) 292-5810

Michigan
Mr. David Warner, Director
Michigan Department of Natural Resources
Environmental Response Division
Title III Notification
P.O. Box 30028
Lansing, MI 48909
(517) 373-8481

Minnesota
Mr. Lee Tischler, Director
Minnesota Emergency Response Commission
Division of Emergency Management
Room B5
State Capitol
St. Paul, MN 55155
(612) 296-2233

Mississippi
Mr. J.E. Maher, Chairman
Mississippi Emergency Response Commission
Director, Mississippi Emergency Management Agency
P.O. Box 4501
Fondren Station
Jackson, MI 39296-4501
(601) 960-9973

Missouri
Mr. Dean Martin, Coordinator
Missoun Emergency Response Commission
Missoun Department of Natural Resources
P.O. Box 3133
Jefferson City, MO 65102
(314) 751-7929

Montana
Mr. Tom Ellerhoff, Co-Chairman
Montana Emergency Response Commission
Environmental Sciences Division
Department of Health and Environmental Sciences
Cogswell Building A-107
Helena, MT 59620
(406) 444-3948

Nebraska
Mr. Craig Bagstad
Technical Services Section
Nebraska Department of Environmental Control
P.O. Box 98922
State House Station
Lincoln, NE 68509-8922
(402) 471-4230

Nevada
Mr. Bob King, Director
Division of Emergency Management
2525 South Carson
Carson City, NV 89710
(702) 885-4240

New Hampshire
Mr. Richard H. Strome, Director
State Emergency Management Agency
State Office Park South
107 Pleasant Street
Concord, NH 03301
(603) 271-2231

New Jersey
Richard A. Dime
Department of Environmental Protection
Division of Environmental Quality
CN-405
Bureau of Hazardous Waste Information
SARA Title III Project
401 East State Street
Trenton, NJ 08625
(609) 292-6714

New Mexico
Mr. Sam Larcombe
New Mexico Emergency Response Commission
New Mexico Department of Public Safety
P.O. Box 1628
Santa Fe, NM 87504-1628
(505) 827-9222

New York
New York Department of Environmental Conservation
Bureau of Spill Response
SARA Title III Section 313
50 Wolf Road
Albany, NY 12233
(518) 457-4107

North Carolina
Mr. Vance E. Kee
North Carolina Division of Emergency Management
116 West Jones Street
Raleigh, NC 27603-1335
(919) 733-3867

North Dakota
Mr. Dean Monteith, Coordinator
North Dakota Emergency Response Commission
North Dakota State Department of Health and Consolidated Laboratories
1200 Missoun Avenue
P.O. Box 5520
Bismarck, ND 58502-5520
(701) 224-2374

Ohio
Ms. Cindy Sierra-DeWulf
Division of Air Pollution Control
1800 Watermark Drive
Columbus, OH 43215
(614) 644-2270

Oklahoma
Mr. Jack W. Muse, Coordinator
Emergency Response Commission
Office of Civil Defense
P.O. Box 53365
Oklahoma City, OK 73152
(405) 521-2481

Oregon
Oregon Emergency Response Commission
c/o Oregon State Fire Marshall
3000 Market Street Plaza
Suite 534
Salem, OR 97310
(503) 378-2885

Pennsylvania
Mr. James Tinney
Bureau of Right-to-Know
Room 1503
Labor and Industry Bldg.
Harrisburg, PA 17120
(717) 783-8150

Puerto Rico
SERC Commissioner
Title III - SARA Section 313
Puerto Rico Environmental Quality Board
P.O. Box 11488
Santurce, PR 00910
(809) 722-0077

Rhode Island
Department of Environmental Management
Division of Air and Hazardous Materials
291 Promenade Street
Providence, RI 02908-5767
Attn: Toxic Release Inventory
(401) 277-2808

South Carolina
Mr. Ron Kinney
Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
(803) 734-5200

South Dakota
Mr. Brad Schultz
South Dakota Emergency Response Commission
Department of Water and Natural Resources
Joe Foss Building
523 East Capitol
Pierre, SD 57501-3181
(605) 773-3153

Tennessee
Mr. Lacy Suiter, Chairman
Tennessee Emergency Response Commission
Director, Tennessee Emergency Management Agency
3041 Sidco Drive
Nashville, TN 37204-1502
1-800-262-3300 (In Tennessee)
1-800-258-3300 (Out of state)

Texas
Mr. David Barker, Supervisor
Emergency Response Unit
Texas Water Commission
P.O. Box 13087 - Capitol Station
Austin, TX 78711-3087
(512) 463-8527

Utah
Mr. Neil Taylor
Utah Hazardous Chemical Emergency Response Commission
Utah Division of Environmental Health
288 North 1460 West
P.O. Box 16690
Salt Lake City, UT 84116-0690
(801) 538-6121

Vermont
Dr. Jan Carney, Deputy Commissioner
Department of Health
60 Main Street
P.O. Box 70
Burlington, VT 05402
(802) 863-7281

Virginia
Mr. Wayne Halbleib, Director
Virginia Emergency Response Council
Department of Waste Management
James Monroe Building
18th Floor
101 North 14th Street
Richmond, VA 23219
(804) 225-2513

Virgin Islands
Mr. Allan D. Smith, Commissioner
Department of Planning and Natural Resources
U.S. Virgin Islands Emergency Response Commission
Title III
179 Altona and Welgunst
Charlotte Amalie
St. Thomas, VI 00802
(809) 774-3320

Washington
Washington Emergency Response Commission
Department of Community Development
Mail Stop GH-51
9th & Columbia Building
Olympia, WA 98504
(800) 633-7585

West Virginia
Mr. William Pinnell
Office of Environmental Health Services
West Virginia Department of Health
1800 East Washington Street East
Room 507
Charleston, WV 25305
(304) 348-2967

Wisconsin
Wisconsin Department of Natural Resources
Office of Technical Services TS-2
P.O. Box 7921
Madison, WI 53707
(608) 266-9255
Attn: Russ Dunst

Wyoming
Mr. Ed Usui, Coordinator
Wyoming Emergency Response Commission
Wyoming Emergency Management Agency
Comprehensive Emergency Management
5500 Bishop Blvd.
Cheyenne, WY 82003
(307) 777-7566

[Notes: (1) If an Indian tribe has chosen to act independently of a state for the purpose of section 313 reporting, facilities located within that Indian community should report to the tribal SERC, or until the SERC is established, the Chief Executive Officer of the Indian tribe, as well as to EPA; (2) Facilities located within the Territories of the Pacific should send a report to the Chief Administrator of the appropriate territory, as well as to EPA.]

APPENDIX F

SECTION 313 EPA REGIONAL CONTACTS

Region 1

Pesticides & Toxics Branch
USEPA Region 1 (APT2311)
JFK Federal Building
Boston, MA 02203
(617) 565-3273

Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont

Region 2

Pesticides & Toxics Branch
USEPA Region 2 (MS240)
Woodbridge Avenue, Building 209
Edison, NJ 08837
(201) 906-6890

New Jersey, New York, Puerto Rico, Virgin Islands

Region 3

Toxics & Pesticides Branch
USEPA Region 3 (3HW42)
841 Chestnut Street
Philadelphia, PA 19107
(215) 597-1260

Delaware, Maryland, Pennsylvania, Virginia, West Virginia, District of Columbia

Region 4

Pesticides & Toxics Substances Branch
USEPA Region 4
345 Courtland Street
Atlanta, GA 30365
(404) 347-5053

Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee

Region 5

Pesticides & Toxic Substances Branch
USEPA Region 5 (5SPT-7)
536 South Dearborn Street
Chicago, IL 60604
(312) 353-5867

Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin

Region 6

Pesticides & Toxic Substances Branch
USEPA Region 6 (6TPT)
1445 Ross Avenue
Dallas, TX 75202-2733
(214) 655-7244

Arkansas, Louisiana, New Mexico, Oklahoma, Texas

Region 7

Office of Congressional and Intergovernmental Liaison
USEPA Region 7 (CIGL)
726 Minnesota Avenue
Kansas City, KS 66101
(913) 236-2806

Iowa, Kansas, Missouri, Nebraska

Region 8

Toxic Substances Branch
USEPA Region 8 (8AT-TS)
999 18th Street
Denver, CO 80202-2405
(303) 293-1730

Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming

Region 9

Pesticides & Toxics Branch
USEPA Region 9 (T-5-3)
215 Fremont Street
San Francisco, CA 94105
(415) 974-7054

Arizona, California, Hawaii, Nevada, American Samoa, Guam, Commonwealth of the Northern Mariana Islands

Region 10

Pesticides & Toxic Substances Branch
USEPA Region 10 (AT083)
1200 Sixth Avenue
Seattle, WA 98101
(206) 442-1091

Alaska, Idaho, Oregon, Washington

APPENDIX G

SECTION 313 FINAL RULE

Please send information on: *(Please indicate the quantities you are requesting.)*

___ Section 313 Rule (FR Reprint)

___ Additional Copies of Instructions and Form R (EPA 560/4-88-005)

___ TRI Magnetic Media Submission Guidance Package (EPA 560/7-88-003)

___ Toxic Chemical Release Inventory Questions and Answers (EPA 560/4-89-002)

___ Section 313 Technical Question and Answers Document

___ Common Synonyms for Section 313 Chemicals (OTS-ETD-001)

___ Comprehensive List of Chemicals Subject to Reporting under the Act (Title III List of Lists) (EPA 560/4-88-003)

___ Supplier Notification Requirements Brochure (EPA 560/4-88-008)

___ Trade Secret Rule and Substantiation Form

Industry Specific Technical Guidance Documents for Estimating Releases:

___ Monofilament Fiber Manufacture (EPA 560/4-88-004a)

___ Printing Operations (EPA 560/4-88-004b)

___ Electrodeposition of Organic Coatings (EPA 560/4-88-004c)

___ Spray Application of Organic Coatings (EPA 560/4-88-004d)

___ Semiconductor Manufacture (EPA 560/4-88-004e)

___ Formulating Aqueous Solutions (EPA 560/4-88-004f)

___ Electroplating Operations (EPA 560/4-88-004g)

___ Textile Dyeing (EPA 560/4-88-004h)

___ Presswood and Laminated Wood Products Manufacturing (EPA 560/4-88-004l)

___ Roller, Knife, and Gravure Coating Operations (EPA 560/4-88-004j)

___ Paper and Paperboard Production (EPA 560/4-88-004k)

___ Leather Tanning and Finishing Processes (EPA 560/4-88-004l)

___ Wood Preserving (EPA 560/4-88-004p)

___ Rubber Production and Compounding (EPA 560/4-88-004q)

Fold

FACILITY NAME

STREET

STATE ZIP CODE

Pla
Sta
Hor

Section 313 Document Distribution Center
P.O. Box 12505
Cincinnati, OH 45212

Form Approved OMB No. 20

Approval Expires 01/9_

Important: Type or print, read instructions before completing form.)

EPA U.S. Environmental Protection Agency

TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM

Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 also known as Title III of the Superfund Amendments and Reauthorization Act

EPA FORM **R**

PART I. FACILITY IDENTIFICATION INFORMATION

(This space for your optional use.)

Public reporting burden for this collection of information is estimated to vary from 30 to 34 hours per response with an average of 32 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Chief, Information Policy Branch (PM-223), U.S. EPA, 401 M St., S.W., Washington, D.C. 20460, Attn: TRI Burden; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Paperwork Reduction Project (2070-0093), Washington, D.C. 20503.

1. 1.1 Are you claiming the chemical identity on page 3 trade secret?

[ ] Yes (Answer question 1.2. Attach substantiation forms.) [ ] No (Do not answer 1.2. Go to question 1.3.)

1.2 If "Yes" in 1.1, is this copy [ ] Sanitized [ ] Unsanitized

1.3 Reporting Year 19__

2. CERTIFICATION (Read and sign after completing all sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official

Signature | Date signed

3 FACILITY IDENTIFICATION

3.1 Facility or Establishment Name

Street Address

City | County

State | Zip Code

WHERE TO SEND COMPLETED FORMS:

1. U.S. ENVIRONMENTAL PROTECTION AGENCY
   P.O. BOX 70266
   WASHINGTON, DC 20024-0266
   ATTN: TOXIC CHEMICAL RELEASE INVENTORY
2. APPROPRIATE STATE OFFICE (See instructions Appendix E)

3.2 This report contains information for (Check one): a. [ ] An entire facility b. [ ] Part of a facility

3.3 Technical Contact | Telephone Number (include area code)

3.4 Public Contact | Telephone Number (include area code)

3.5 SIC Code (4 digit): a | b | c | d | e | f

3.6 Latitude: Degrees | Minutes | Seconds — Longitude: Degrees | Minutes | Seconds

3.7 Dun & Bradstreet Number(s): a | b

3.8 EPA Identification Number(s) (RCRA I.D. No.): a | b

3.9 NPDES Permit Number(s): a | b

3.10 Receiving Streams or Water Bodies (enter one name per box): a | b | c | d | e | f

3.11 Underground Injection Well Code (UIC) Identification Number(s): a | b

4 PARENT COMPANY INFORMATION

4.1 Name of Parent Company

4.2 Parent Company's Dun & Bradstreet Number

(Important: Type or print; read instructions before completing form.)

EPA

EPA FORM R
PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES

(This space for your optional use.)

1. PUBLICLY OWNED TREATMENT WORKS (POTWs)

1.1 POTW name		1.2 POTW name	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip

2. OTHER OFF-SITE LOCATIONS (DO NOT REPORT LOCATIONS TO WHICH WASTES ARE SENT ONLY FOR RECYCLING OR REUSE.)

2.1 Off-site location name		2.2 Off-site location name	
EPA Identification Number (RCRA ID. No.)		EPA Identification Number (RCRA ID. No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company? [ ] Yes [ ] No		Is location under control of reporting facility or parent company? [ ] Yes [ ] No	

2.3 Off-site location name		2.4 Off-site location name	
EPA Identification Number (RCRA ID. No.)		EPA Identification Number (RCRA ID. No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company? [ ] Yes [ ] No		Is location under control of reporting facility or parent company? [ ] Yes [ ] No	

2.5 Off-site location name		2.6 Off-site location name	
EPA Identification Number (RCRA ID. No.)		EPA Identification Number (RCRA ID. No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company? [ ] Yes [ ] No		Is location under control of reporting facility or parent company? [ ] Yes [ ] No	

[ ] Check if additional pages of Part II are attached. How many? _____

Instructions: Type or print, read instructions before completing form.

EPA

EPA FORM R
PART III. CHEMICAL-SPECIFIC INFORMATION

(This space for your optional use)

1 CHEMICAL IDENTITY (Do not complete this section if you complete Section 2.)

1.1 [Reserved]

1.2 CAS Number (Enter the number exactly as it appears on the 313 list. Enter NA if reporting a chemical category.)

1.3 Chemical or Chemical Category Name (Enter the name exactly as it appears on the 313 list.)

1.4 Generic Chemical Name (Complete only if Part I, Section 1.1 is checked "Yes." Generic name must be structurally descriptive.)

2 MIXTURE COMPONENT IDENTITY (Do not complete this section if you complete Section 1.)

2 Generic Chemical Name Provided by Supplier (Limit the name to a maximum of 70 characters (e.g., numbers, letters, spaces, punctuation).)

3. ACTIVITIES AND USES OF THE CHEMICAL AT THE FACILITY (Check all that apply.)

3.1 Manufacture the chemical: a [ ] Produce; b [ ] Import. If produce or import: c [ ] For on-site use/processing; d [ ] For sale/distribution; e [ ] As a byproduct; f. [ ] As an impurity

3.2 Process the chemical: a [ ] As a reactant; b [ ] As a formulation component; c [ ] As an article component; d. [ ] Repackaging only

3.3 Otherwise use the chemical: a [ ] As a chemical processing aid; b [ ] As a manufacturing aid; c [ ] Ancillary or other use

4. MAXIMUM AMOUNT OF THE CHEMICAL ON-SITE AT ANY TIME DURING THE CALENDAR YEAR

4.1 [ ] (enter code)

5 RELEASES OF THE CHEMICAL TO THE ENVIRONMENT ON-SITE

		A Total Release (lbs/yr)			B Basis of Estimate (enter code)	C % From Stormwater
You may report releases of less than 1,000 lbs by checking ranges under A.1. (Do not use both A.1 and A.2)		A.1 Reporting Ranges: 0 [ ] 1–499 [ ] 500–999 [ ]	A.2 Enter Estimate			
5.1 Fugitive or non-point air emissions	5.1a	[ ] [ ] [ ]		5.1b [ ]		
5.2 Stack or point air emissions	5.2a	[ ] [ ] [ ]		5.2b [ ]		
5.3 Discharges to receiving streams or water bodies (Enter letter code from Part I, Section 3.10 for stream(s) in the box provided.) 5.3.1 [ ]	5.3.1a	[ ] [ ] [ ]		5.3.1b [ ]		5.3.1c
5.3.2 [ ]	5.3.2a	[ ] [ ] [ ]		5.3.2b [ ]		5.3.2c
5.3.3 [ ]	5.3.3a	[ ] [ ] [ ]		5.3.3b [ ]		5.3.3c
5.4 Underground Injection	5.4a	[ ] [ ] [ ]		5.4b [ ]		
5.5 Releases to land						
5.5.1 On-site landfill	5.5.1a	[ ] [ ] [ ]		5.5.1b [ ]		
5.5.2 Land treatment/application farming	5.5.2a	[ ] [ ] [ ]		5.5.2b [ ]		
5.5.3 Surface impoundment	5.5.3a	[ ] [ ] [ ]		5.5.3b [ ]		
5.5.4 Other disposal	5.5.4a	[ ] [ ] [ ]		5.5.4b [ ]		

[ ] Check if additional information is provided on Part IV-Supplemental Information.)

(Important: Type or print, read instructions before completing form.)

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PART III. CHEMICAL-SPECIFIC INFORMATION (continued)

(This space for your optional use)

6. TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS

You may report transfers of less than 1,000 lbs by checking ranges under A.1 (Do not use both A.1 and A.2)	A. Total Transfers (lbs/yr) A.1 Reporting Ranges (0 / 1–499 / 500–999)	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
6.1.1 Discharge to POTW (enter location number from Part II, Section 1.) [1]	[ ] [ ] [ ]		6.1.1b [ ]	
6.2.1 Other off-site location (enter location number from Part II, Section 2.) [2]	[ ] [ ] [ ]		6.2.1b [ ]	6.2.1c [M] [ ]
6.2.2 Other off-site location (enter location number from Part II, Section 2.) [2]	[ ] [ ] [ ]		6.2.2b [ ]	6.2.2c [M] [ ]
6.2.3 Other off-site location (enter location number from Part II, Section 2.) [2]	[ ] [ ] [ ]		6.2.3b [ ]	6.2.3c [M] [ ]

[ ] (Check if additional information is provided on Part IV-Supplemental Information.)

7. WASTE TREATMENT METHODS AND EFFICIENCY

A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes / No
7.1a [ ]	7.1b [ ][ ][ ]	7.1c [ ]	7.1d [ ]	7.1e %	7.1f [ ] [ ]
7.2a [ ]	7.2b [ ][ ][ ]	7.2c [ ]	7.2d [ ]	7.2e %	7.2f [ ] [ ]
7.3a [ ]	7.3b [ ][ ][ ]	7.3c [ ]	7.3d [ ]	7.3e %	7.3f [ ] [ ]
7.4a [ ]	7.4b [ ][ ][ ]	7.4c [ ]	7.4d [ ]	7.4e %	7.4f [ ] [ ]
7.5a [ ]	7.5b [ ][ ][ ]	7.5c [ ]	7.5d [ ]	7.5e %	7.5f [ ] [ ]
7.6a [ ]	7.6b [ ][ ][ ]	7.6c [ ]	7.6d [ ]	7.6e %	7.6f [ ] [ ]
7.7a [ ]	7.7b [ ][ ][ ]	7.7c [ ]	7.7d [ ]	7.7e %	7.7f [ ] [ ]
7.8a [ ]	7.8b [ ][ ][ ]	7.8c [ ]	7.8d [ ]	7.8e %	7.8f [ ] [ ]
7.9a [ ]	7.9b [ ][ ][ ]	7.9c [ ]	7.9d [ ]	7.9e %	7.9f [ ] [ ]
7.10a [ ]	7.10b [ ][ ][ ]	7.10c [ ]	7.10d [ ]	7.10e %	7.10f [ ] [ ]

[ ] (Check if additional information is provided on Part IV-Supplemental Information.)

8. OPTIONAL INFORMATION ON WASTE MINIMIZATION

(Indicate actions taken to reduce the amount of the chemical being released from the facility. See the instructions for codes, items and an explanation of what information to include.)

A. Type of Modification (enter code)	B. Quantity of the Chemical in Wastes Prior to Treatment or Disposal: Current reporting year (lbs/yr)	Prior year (lbs/yr)	Or percent change	C. Index	D. Reason for Action (enter code)
[M] [ ]	_____	_____	_____ %	[ ] . [ ]	[R] [ ]

EPA

EPA FORM R

PART IV. SUPPLEMENTAL INFORMATION

Use this section if you need additional space for answers to questions in Part III. Number the lines used sequentially from lines in prior sections (e.g., 5.3.4; 6.1.2; 7.11)

(This space for your optional use.)

ADDITIONAL INFORMATION ON RELEASES OF THE CHEMICAL TO THE ENVIRONMENT ON-SITE (Part III, Section 5.3)

You may report releases of less than 1,000 lbs. by checking ranges under A.1 (Do not use both A.1 and A.2)

		A. Total Release (lbs/yr)		B. Basis of Estimate (enter code in box provided)	C. % From Stormwater
		A.1 Reporting Ranges: 0 / 1–499 / 500–999	A.2 Enter Estimate		
5.3 Discharges to receiving streams or water bodies	5.3 ___	5.3 ___a [ ] [ ] [ ]		5.3. ___ b	5.3 ___ c
(Enter letter code from Part I, Section 3.10 for stream(s) in the box provided.)	5.3 ___	5.3 ___a [ ] [ ] [ ]		5.3 ___ b	5.3 ___ c
	5.3 ___	5.3 ___a [ ] [ ] [ ]		5.3 ___ b	5.3 ___ c

ADDITIONAL INFORMATION ON TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS (Part III, Section 6)

You may report transfers of less than 1,000 lbs. by checking ranges under A.1. (Do not use both A.1 and A.2)

	A. Total Transfers (lbs/yr)		B. Basis of Estimate (enter code in box provided)	C. Type of Treatment/ Disposal (enter code in box provided)
	A.1 Reporting Ranges: 0 / 1–499 / 500–999	A.2 Enter Estimate		
6.1. ___ Discharge to POTW (enter location number from Part II, Section 1.) [1]	[ ] [ ] [ ]		6.1. ___ b	
6.2. ___ Other off-site location (enter location number from Part II, Section 2.) [2]	[ ] [ ] [ ]		6.2 ___ b	6.2 ___ c [M]
6.2. ___ Other off-site location (enter location number from Part II, Section 2.) [2]	[ ] [ ] [ ]		6.2 ___ b	6.2 ___ c [M]
6.2. ___ Other off-site location (enter location number from Part II, Section 2.) [2]	[ ] [ ] [ ]		6.2 ___ b	6.2 ___ c [M]

ADDITIONAL INFORMATION ON WASTE TREATMENT METHODS AND EFFICIENCY (Part III, Section 7)

A. General Wastestream (enter code in box provided)	B. Treatment Method (enter code in box provided)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes / No
7. ___ a	7. ___ b	7. ___ c	7. ___ d [ ]	7. ___ e %	7. ___ f [ ] [ ]
7. ___ a	7. ___ b	7. ___ c	7. ___ d [ ]	7. ___ e %	7. ___ f [ ] [ ]
7. ___ a	7. ___ b	7. ___ c	7. ___ d [ ]	7. ___ e %	7. ___ f [ ] [ ]
7. ___ a	7. ___ b	7. ___ c	7. ___ d [ ]	7. ___ e %	7. ___ f [ ] [ ]
7. ___ a	7. ___ b	7. ___ c	7. ___ d [ ]	7. ___ e %	7. ___ f [ ] [ ]
7. ___ a	7. ___ b	7. ___ c	7. ___ d [ ]	7. ___ e %	7. ___ f [ ] [ ]
7. ___ a	7. ___ b	7. ___ c	7. ___ d [ ]	7. ___ e %	7. ___ f [ ] [ ]
7. ___ a	7. ___ b	7. ___ c	7. ___ d [ ]	7. ___ e %	7. ___ f [ ] [ ]
7. ___ a	7. ___ b	7. ___ c	7. ___ d [ ]	7. ___ e %	7. ___ f [ ] [ ]
7. ___ a	7. ___ b	7. ___ c	7. ___ d [ ]	7. ___ e %	7. ___ f [ ] [ ]

column D of Section 7. You are required to indicate the influent concentration only to the first step of the sequential treatment system (the cyclone collector) and must report the overall treatment efficiency of the system entered on the line for the last treatment step (the fabric filter). Note that the wet scrubber and fabric filter on the grid paste mixer exhaust are not sequential treatment steps, because each treats a different wastestream generated at different times during the same process.

In Section 7, columns C and E, respectively, you must indicate the range of influent concentration and treatment efficiency for each treatment system listed. You must estimate the efficiency and influent concentration of each air emission treatment system, as the stack test program did not determine influent concentrations. You have manufacturers' data on the efficiency of each treatment system and should use this information along with effluent concentration data to estimate the influent concentrations. The efficiency estimates for air treatment systems are not based on operating data; this must be indicated in column F of Section 7.

Wastewater Treatment Systems. The POTW discharge monitoring system provides actual operating data concerning the removal efficiencies, and influent and effluent concentrations of all wastewater treatment systems at your facility except the single-stage settler. The pH adjustment (chemical precipitation) and filtration steps used in the wastewater pretreatment system are considered to be sequential treatment steps, as are the single-stage settler, pH adjustment, and evaporation (the surface impoundment) used to treat the grid paste application discharge. The treatment code for chemical precipitation (lime or sodium hydroxide) is C01, and the code for filtration is P12.

The treatment code for treatment of grid paste application washwater in the multi-stage settler is P11 (settling/clarification), and the treatment code for process reuse of the wastewater is R99 (other recovery/reuse). The code for evaporation of wastewater in the surface impoundment is P99 (other physical treatment). The overall treatment efficiencies for the grid paste application discharge and scrubber discharge are both 100 percent, because the wastewater streams are completely eliminated through evaporation and reuse respectively. Note that you do not report the precipitation of lead in the surface impoundment as "metals recovery," because you no longer remove the lead sludge from the impoundment for reuse. This will be considered disposal to land for the 1,500 pounds of lead that were sent to the impoundment.

Information on Waste Minimization. Your facility formerly shipped the lead-containing sludge from the multi-stage settler used to treat the grid paste application wastewater to an off-site disposal facility. In 1987, however, process modifications allowed you to return the sludge to the off-site smelter operated by your company for recovery and reuse, resulting in significant cost-savings. The most significant savings is in the cost of treating the sludge; the value of the recovered lead is less significant. The amount of lead formerly disposed of at the off-site facility is approximately 100 lb/yr; the same amount is now recovered by the smelter. The code for the type of modification is M2 (recovery off-site) and that for the reason for action is R2 (reduction in treatment/disposal cost). The index value of 1.0 is based on the fact that production of batteries was approximately the same in both years.

Completion of the Section 313 Reporting Form

As shown in the sample form that follows, your facility information is entered in Part I of the reporting form. The reporting year, Dun and Bradstreet Number, EPA Identification Number and other required information have been entered. The sample report contains no trade secret information and has been completed for an entire covered facility, as previously described. All non-applicable information on the form has been marked NA. The vice president of your facility has been briefed on the information contained in the report and has signed the certification (Part I, Section 2). If separate reports were being prepared for lead and lead compounds, your vice president would have signed each reporting form. The completed form is now ready to be submitted to EPA and the appropriate State agency.

Form Approved OMB No. 2070-0093
Approval Expires 01/91

(Important: Type or print; read instructions before completing form.)

EPA U.S. Environmental Protection Agency

TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM

Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986, also known as Title III of the Superfund Amendments and Reauthorization Act

EPA FORM **R**

PART I. FACILITY IDENTIFICATION INFORMATION

(This space for your optional use.)

Public reporting burden for this collection of information is estimated to vary from 30 to 34 hours per response with an average of 32 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Chief, Information Policy Branch (PM-223), US EPA, 401 M St. SW, Washington, D.C. 20460; and to Office of Information and Regulatory Affairs, Office of Management and Budget, Paperwork Reduction Project (2070-0093), Washington, D.C. 20503.

1. 1.1 Are you claiming the chemical identity on page 3 trade secret?
[ ] Yes (Answer question 1.2. Attach substantiation forms.) [X] No (Do not answer 1.2. Go to question 1.3.)

1.2 If "Yes" in 1.1, is this copy [ ] Sanitized [ ] Unsanitized

1.3 Reporting Year 19 88

2. CERTIFICATION (Read and sign after completing all sections.)

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete and that the amounts and values in this report are accurate based on reasonable estimates using data available to the preparers of this report.

Name and official title of owner/operator or senior management official:
Mr. Stanley L. Pirx, III, Vice President, Battery Products Division

Signature: Stanley L. Pirx, III
Date signed: February 12, 1989

3. FACILITY IDENTIFICATION

3.1
Facility or Establishment Name: Pirx-Lewis, Inc., Battery Products Div.
Street Address: 10545 Cerillos Road
City: Albuquerque
County: Bernadillo
State: NM
Zip Code: 81103-0420

WHERE TO SEND COMPLETED FORMS:
1. U.S. ENVIRONMENTAL PROTECTION AGENCY
P.O. BOX 70266
WASHINGTON, DC 20024-0266
ATTN: TOXIC CHEMICAL RELEASE INVENTORY
2. APPROPRIATE STATE OFFICE (See instructions Appendix E)

3.2 This report contains information for (Check one): a. [X] An entire facility b. [ ] Part of a facility.

3.3 Technical Contact: Mr. Roberto Garcia — Telephone Number (include area code): (505) 752-5360

3.4 Public Contact: Ms. Sandy A. Range — Telephone Number (include area code): (505) 752-5363

3.5 SIC Code (4 digit): a. 3691 b. NA c. d. e. f.

3.6

Latitude			Longitude		
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
35	10	00	106	30	00

3.7 Dun & Bradstreet Number(s): a. 91-976-2270 b. NA

3.8 EPA Identification Number(s) (RCRA I.D. No.): a. NMD919762270 b. NA

3.9 NPDES Permit Number(s): a. NA b.

3.10 Receiving Streams or Water Bodies (enter one name per box): a. Tijeros Arroyo b. NA c. d. e. f.

3.11 Underground Injection Well Code (UIC) Identification Number(s): a. NA b.

4. PARENT COMPANY INFORMATION

4.1 Name of Parent Company: Cibola Motor Works

4.2 Parent Company's Dun & Bradstreet Number: 91-783-4567

(Important: Type or print; read instructions before completing form.)

EPA EPA FORM R

PART II. OFF-SITE LOCATIONS TO WHICH TOXIC CHEMICALS ARE TRANSFERRED IN WASTES

(This space for your optional use.)

1. PUBLICLY OWNED TREATMENT WORKS (POTWs)

1.1 POTW name		1.2 POTW name	
City of Albuquerque Treatment Works		NA	
Street Address		Street Address	
50100 U.S. Route 66			
City	County	City	County
Albuquerque	Bernadillo		
State	Zip	State	Zip
NM	87105-9987		

2. OTHER OFF-SITE LOCATIONS (DO NOT REPORT LOCATIONS TO WHICH WASTES ARE SENT ONLY FOR RECYCLING OR REUSE).

2.1 Off-site location name		2.2 Off-site location name	
Colorado Waste Disposal, Inc.			
EPA Identification Number (RCRA ID No.)		EPA Identification Number (RCRA ID No.)	
COD554698764		NA	
Street Address		Street Address	
10500 County Route 76			
City	County	City	County
Golden	Jefferson		
State	Zip	State	Zip
CO	80305-1311		
Is location under control of reporting facility or parent company?		Is location under control of reporting facility or parent company?	
[ ] Yes [X] No		[ ] Yes [ ] No	

2.3 Off-site location name		2.4 Off-site location name	
EPA Identification Number (RCRA ID No.)		EPA Identification Number (RCRA ID No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company?		Is location under control of reporting facility or parent company?	
[ ] Yes [ ] No		[ ] Yes [ ] No	

2.5 Off-site location name		2.6 Off-site location name	
EPA Identification Number (RCRA ID No.)		EPA Identification Number (RCRA ID No.)	
Street Address		Street Address	
City	County	City	County
State	Zip	State	Zip
Is location under control of reporting facility or parent company?		Is location under control of reporting facility or parent company?	
[ ] Yes [ ] No		[ ] Yes [ ] No	

[ ] Check if additional pages of Part II are attached. How many? _____

(Important: Type or print, read instructions before completing form.)

EPA

EPA FORM R
PART III. CHEMICAL-SPECIFIC INFORMATION

(This space for your optional use.)

1. CHEMICAL IDENTITY (Do not complete this section if you complete Section 2.)

1.1 [Reserved]

1.2 CAS Number (Enter the number exactly as it appears on the 313 list. Enter NA if reporting a chemical category.)
NA

1.3 Chemical or Chemical Category Name (Enter the name exactly as it appears on the 313 list.)
Lead Compounds

1.4 Generic Chemical Name (Complete only if Part I, Section 1.1 is checked "Yes." Generic name must be structurally descriptive.)

2. MIXTURE COMPONENT IDENTITY (Do not complete this section if you complete Section 1.)

Generic Chemical Name Provided by Supplier (Limit the name to a maximum of 70 characters (e.g., numbers, letters, spaces, punctuation).)

3. ACTIVITIES AND USES OF THE CHEMICAL AT THE FACILITY (Check all that apply.)

3.1	Manufacture the chemical:	a. [X] Produce	b. [ ] Import	If produce or import: c. [X] For on-site use/processing	d. [ ] For sale/ distribution	e. [ ] As a byproduct	f. [ ] As an impurity
3.2	Process the chemical:	a. [X] As a reactant	b. [ ] As a formulation component	c. [X] As an article component	d. [ ] Repackaging only	
3.3	Otherwise use the chemical:	a. [ ] As a chemical processing aid	b. [ ] As a manufacturing aid	c. [ ] Ancillary or other use		

4. MAXIMUM AMOUNT OF THE CHEMICAL ON-SITE AT ANY TIME DURING THE CALENDAR YEAR

[0][6] (enter code)

5. RELEASES OF THE CHEMICAL TO THE ENVIRONMENT ON-SITE

You may report releases of less than 1,000 lbs. by checking ranges under A.1. (Do not use both A.1 and A.2.)

		A. Total Release (lbs/yr) A.1 Reporting Ranges (0 / 1–499 / 500–999)	A.2 Enter Estimate	B. Basis of Estimate (enter code)	
5.1 Fugitive or non-point air emissions	5.1a	[ ] [X] [ ]		5.1b [O]	
5.2 Stack or point air emissions	5.2a	[ ] [ ] [ ]	2400	5.2b [M]	
5.3 Discharges to receiving streams or water bodies — 5.3.1 [A]	5.3.1a	[ ] [X] [ ]		5.3.1b [M]	C. % From Stormwater 5.3.1c 100
(Enter letter code from Part I, Section 3.10 for stream(s) in the box provided.) — 5.3.2 [ ]	5.3.2a	[ ] [ ] [ ]	NA	5.3.2b [ ]	5.3.2c NA
5.3.3 [ ]	5.3.3a	[ ] [ ] [ ]		5.3.3b [ ]	5.3.3c
5.4 Underground injection	5.4a	[ ] [ ] [ ]	NA	5.4b [ ]	
5.5 Releases to land					
5.5.1 On-site landfill	5.5.1a	[ ] [ ] [ ]	NA	5.5.1b [ ]	
5.5.2 Land treatment/application farming	5.5.2a	[ ] [ ] [ ]	NA	5.5.2b [ ]	
5.5.3 Surface impoundment	5.5.3a	[ ] [ ] [ ]	1500	5.5.3b [C]	
5.5.4 Other disposal	5.5.4a	[ ] [ ] [ ]	NA	5.5.4b [ ]	

[ ] (Check if additional information is provided on Part IV–Supplemental Information.)

(Important: Type or print; read instructions before completing form.)

EPA

EPA FORM R

PART III. CHEMICAL-SPECIFIC INFORMATION (continued)

(This space for your optional use.)

6. TRANSFERS OF THE CHEMICAL IN WASTE TO OFF-SITE LOCATIONS

You may report transfers of less than 1,000 lbs. by checking ranges under A.1. (Do not use both A.1 and A.2)	A. Total Transfers (lbs/yr) A.1 Reporting Ranges 0 / 1-499 / 500-999	A.2 Enter Estimate	B. Basis of Estimate (enter code)	C. Type of Treatment/ Disposal (enter code)
6.1.1 Discharge to POTW (enter location number from Part II, Section 1.) 1 1	[ ] [x] [ ]		6.1.1b M	
6.2.1 Other off-site location (enter location number from Part II, Section 2.) 2 1	[ ] [x] [ ]		6.2.1b O	6.2.1c M 7 2
6.2.2 Other off-site location (enter location number from Part II, Section 2.) 2	[ ] [ ] [ ]	NA	6.2.2b	6.2.2c M
6.2.3 Other off-site location (enter location number from Part II, Section 2.) 2	[ ] [ ] [ ]		6.2.3b	6.2.3c M

[ ] (Check if additional information is provided on Part IV-Supplemental Information.)

7. WASTE TREATMENT METHODS AND EFFICIENCY

A. General Wastestream (enter code)	B. Treatment Method (enter code)	C. Range of Influent Concentration (enter code)	D. Sequential Treatment? (check if applicable)	E. Treatment Efficiency Estimate	F. Based on Operating Data? Yes / No
7.1a A	7.1b A 0 6	7.1c 3	7.1d [x]	7.1e NA %	7.1f [ ] [ ]
7.2a A	7.2b A 0 6	7.2c	7.2d [x]	7.2e 99.5 %	7.2f [ ] [x]
7.3a A	7.3b A 0 6	7.3c 3	7.3d [ ]	7.3e 98.0 %	7.3f [ ] [x]
7.4a A	7.4b A 0 3	7.4c 3	7.4d [ ]	7.4e 90.0 %	7.4f [ ] [x]
7.5a A	7.5b A 0 6	7.5c 3	7.5d [ ]	7.5e 98.0 %	7.5f [ ] [x]
7.6a W	7.6b P 1 1	7.6c 2	7.6d [x]	7.6e NA %	7.6f [ ] [ ]
7.7a W	7.7b C 0 1	7.7c	7.7d [x]	7.7e NA %	7.7f [ ] [ ]
7.8a W	7.8b P 9 9	7.8c	7.8d [x]	7.8e 100 %	7.8f [x] [ ]
7.9a W	7.9b P 1 1	7.9c 2	7.9d [x]	7.9e NA %	7.9f [ ] [ ]
7.10a W	7.10b R 9 9	7.10c	7.10d [x]	7.10e 100 %	7.10f [x] [ ]

[x] (Check if additional information is provided on Part IV-Supplemental Information.)

8. OPTIONAL INFORMATION ON WASTE MINIMIZATION

(Indicate actions taken to reduce the amount of the chemical being released from the facility. See the instructions for coded items and an explanation of what information to include.)

A. Type of Modification (enter code)	B. Quantity of the Chemical in Wastes Prior to Treatment or Disposal: Current reporting year (lbs/yr)	Prior year (lbs/yr)	Or percent change	C. Index	D. Reason for Action (enter code)
M 2	121,700	121,800	%	1.0	R 2

United States
Environmental Protection
Agency

Office of Pesticides
and Toxic Substances

EPA 560/4-88-004a
January 1988

EPA

Title III Section 313 Release Reporting Guidance

Estimating Chemical Releases From Monofilament Fiber Manufacturing

Estimating Chemical Releases From Monofilament Fiber Manufacturing

Manufacturers of monofilament fibers may be required to report annually any releases to the environment of certain chemicals regulated under Section 313, Title III, of the Superfund Amendments and Reauthorization Act (SARA) of 1986. If your facility is classified under SIC codes 20 through 39 (monofilament fiber manufacturers generally fall under SIC codes 2823 and 2824) and has 10 or more full-time employees, for calendar year 1987 you must report all environmental releases of any Section 313-listed chemical or chemical category manufactured or processed by your facility in an amount exceeding 75,000 pounds per year or otherwise used in an amount exceeding 10,000 pounds per year. For calendar years 1988 and 1989 (and beyond), the threshold reporting quantity for manufactured or processed chemicals drops to 50,000 and 25,000 pounds per year, respectively.

This document has been developed to assist monofilament fiber manufacturers in the completion of Part III (Chemical Specific Information) of the Toxic Chemical Release Inventory Reporting Form. Included herein is general information on toxic chemicals used and process wastes generated, along with several examples to demonstrate the types of data needed and various methodologies available for estimating releases. If your facility performs other operations in addition to monofilament fiber manufacturing, you must also include any releases of toxic chemicals from these operations.

Step One

Determine if your facility processes or uses any of the chemicals subject to reporting under Section 313.

A suggested approach for determination of the chemicals your facility uses that could be subject to reporting requirements is to make a detailed review of the chemicals and materials you have purchased. If you do not know the specific ingredients of a chemical formulation, consult your suppliers for this information. If they will not provide this information, you must follow the steps outlined to handle this eventuality in the instructions provided with the Toxic Chemical Release Inventory Reporting Form.

The list presented here includes chemicals typically used in monofilament fiber manufacture that are subject to reporting under Section 313. This list does not necessarily include all of the chemicals your facility uses that are subject to reporting, and it may include many chemicals that you do not use. You should also determine whether any of the listed chemicals are created during processing at your facility.

Polymer constituents: Propylene, ethylene glycol, terephthalic acid, acrylonitrile, carbon disulfide, methyl acrylate, p-phenyldiamine, ethylene, vinyl chloride, vinyl acetate

Solvents/precipitants: Acetone, toluene, sodium hydroxide, sulfuric acid, methyl ethyl ketone, aqueous $ZnCl_2$

Flame retardants: Decabromodiphenyl oxide, vinyl bromide, hexachloropentadiene

Promoters/activators: Hydrazine, hydroquinone

Pigments: Titanium dioxide

Lubricants: Ammonium salts

Step Two

Determine if your facility surpassed the threshold quantities established for reporting of listed chemicals last year.

You must submit a separate Toxic Chemical Release Inventory Reporting Form for each listed chemical that is "manufactured," "processed," or "otherwise used" at your facility in excess of the threshold quantities presented earlier. Manufacture includes materials produced as byproducts or impurities. Toxic compounds that are incorporated into your products (for example, a flame retardant applied to a fiber) would be considered "processed" because they become part of the marketed finished product. Degreasing solvents, cleaning agents, and other chemicals that do not become part of the finished product would be considered "otherwise used."

The amount of a chemical processed or otherwise used at your facility represents the amount purchased during the year, adjusted for beginning and ending inventories. To ascertain the amount of chemical in a mixed formulation, multiply the amount of the mixture (in pounds) by the concentration of the chemical (weight percent) to obtain the amount of chemical processed.

Example: Calculating annual use of sulfuric acid through purchases and inventory changes.

During 1987, a plant purchased and used 20,000 pounds of sulfuric acid at 40 percent by weight. From inventory it used 10,000 pounds of sulfuric acid at 40 percent by weight. The site also used 4,000 pounds of a formulation containing 15 percent sulfuric acid by weight.

Amount of sulfuric acid used =

(20,000 lb sulfuric acid x 0.40) +

(10,000 lb sulfuric acid x 0.40) +

(4,000 lb sulfuric acid x 0.15)

= 12,600 lb

A listed chemical may be a component of several formulations you purchase, so you may need to ask your supplier for information on the concentration (percentage) of the chemical in each. For chemical categories, your reporting obligations are determined by the total amounts of all chemicals in the category.

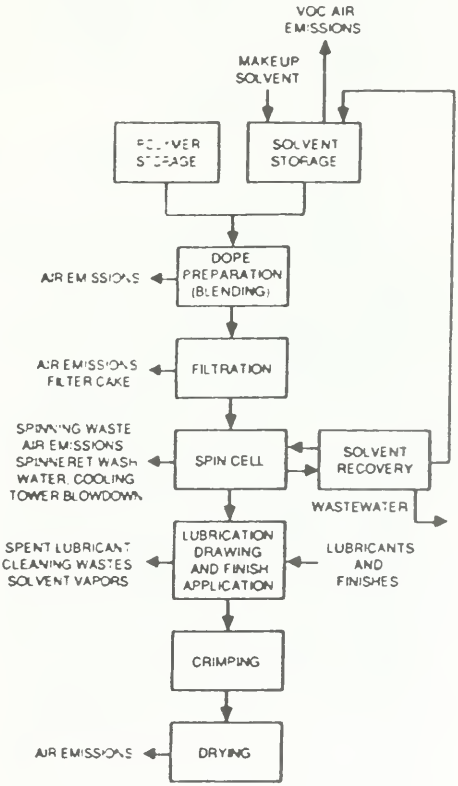
You must complete a report for each chemical for which a threshold is exceeded. The thresholds apply separately; therefore, if you both process and use a chemical and either threshold is exceeded, you must report for both activities. If neither threshold is exceeded, no report is needed.

Step Three

Identify points of release for the chemical(s) subject to reporting.

An effective means of evaluating points of release for listed toxic chemicals is to draw a process flow diagram identifying the operations performed at your facility. The figure on the right is a generalized flow diagram for monofilament fiber manufacturing. Because each facility is unique, you are strongly urged to develop a flow diagram for your particular operations that details the input of materials and chemicals and the waste sources resulting from the operation of each unit.

Air emissions of volatile chemicals will occur during fiber spinning and processing. Solvent recovery systems, vessel washings, and condensate may produce water releases. Potential sources of solid wastes include filter cakes, distillation fractions, spent catalysts, and vessel and tank residues. If a water treatment plant is located on site, releases also may occur from disposal of the sludge. Your reporting must account for all releases.



Example Flow Diagram of Monofilament Fiber Manufacturing

Step Four

Estimate releases of toxic chemicals.

After all of the toxic chemicals and waste sources have been identified, you can estimate the releases of the individual chemicals. Section 313 requires that releases to air, water, and land and transfers to offsite facilities be reported for each toxic chemical meeting the threshold reporting values. The usual approach entails first estimating

releases from waste sources at your facility (that is, wastewater, air release points, and solid waste) and then, based on the disposal method used, determining whether releases from a particular waste source are to air, water, land, or an offsite disposal facility.

In general, there are four types of release estimation techniques:

- **Direct measurement**
- **Mass balance**
- **Engineering calculations**
- **Emission factors**

Descriptions of these techniques are provided in the EPA general Section 313 guidance document, Estimating Releases and Waste-Treatment Efficiencies for the Toxic Chemical Release Inventory Form.

Provisions of the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act, and other regulations require monitoring of certain waste streams. If available, data gathered for these purposes can be used to estimate releases. When only a small amount of direct measurement data is available, you must decide if another estimation technique would give a more accurate estimate. Mass balance techniques and engineering assumptions and calculations can be used in a variety of situations to estimate toxic releases. These methods of estimation rely heavily on process operating parameters; thus, the techniques developed are very site-specific. Emission factors are available for some industries in publications referenced in the general Section 313 guidance document. Also, emission factors for your particular facility can be developed in-house by performing detailed measurements of wastes at different production levels.

Toxic Releases to Air

If you have not measured air emissions from your process, you can use one of the following approaches to estimate releases to air.

1) Volatile organic compounds

Releases of solvents and other volatile organic compounds used in your process will be primarily to air. Releases to air can be estimated as follows:

Amount of solvents released to air =

amount used -

amount accounted for by other wastes destroyed in treatment

In other words, rather than directly estimating air releases, you should estimate other releases first and then subtract them from the quantity known to be used.

Example: Estimating release of carbon disulfide used as a fiber constituent in fiber spinning.

Amount of carbon disulfide released to air =

100,000 lb used in 1987 -

10,000 lb accounted for in sludges incinerated on site -

1,000 lb discharged in wastewater -

5,000 lb in sludge shipped offsite -

50,000 lb accounted for in fiber product

= 34,000 lb

If you use acetone, dimethylformamide (DMF), or dimethylacetamide (DMAc) as the solvent in dry or wet spinning processes, you may be able to use the emission factors given in the table at the top of the following page.

Solvent Usage and Emission Factors for Several Types of Monofilament Fiber Manufacturing Processes

		Emission factors kg/1000 kg of fiber produced			
Plant	Solvent	Makeup solvent	Solvent residual in fiber	Solvent losses to water	Emissions
Wet spin*	DMAc	70	5	25	40
Dry spin*	DMF	70	5	20	45
Dry spin	Acetone	155	5	10	140
Filter-tow dry spin	Acetone	130	Negligible	10	120
Filament yarn dry spin	Acetone	175	10	20	145

*These plants have a filament washing stage that extracts residual solvent and monomer from the fiber.

In the following example, these factors are used to calculate air releases.

Example: Using emission factors to estimate VOC releases

A plant produced 120,000 kilograms of modacrylic in 1987. Acetone was used as the solvent. Based on the VOC estimate for acetone from the preceding table,

Amount of acetone released to air =

120,000 kg fiber x

140 kg acetone/1,000 kg fiber x

2.2 lb/1 kg

= 36,960 lb

Using this approach, the plant in this example could report air emissions of 37,000 pounds of acetone.

2) Particulates

Two methods can be used to estimate the particulates released to air. The first entails the use of available emission factors for general monofilament, polypropylenes, or polyvinyl chloride manufacturing. The table shown at the bottom of this page presents selected air emission factors. In the following example, these factors are used to estimate the release of particulates to air during the manufacture of polypropylene.

Air Emission Factors for General Monofilament, Polyvinyl Chloride, and Polypropylene Manufacturing

	Particulate		Gases	
Type	lb/ton Pigment	kg/MT Pigment	lb/ton Product	kg/MT Product
General	5-10	2.5-5	-	-
Polyvinyl chloride	35	17.5	17	8.5
Polypropylene	3	1.5	0.7	0.35

Example: Using emission factors to estimate particulate emissions to air.

A plant produced 500,000 pounds of polypropylene in 1987. The pigment content of this fiber was 8 percent. Based on the emission factors provided in the preceding table, the particulate releases can be calculated as follows:

Amount of pigment released =

500,000 lb fiber x

0.08 lb pigment/1 lb fiber x

1 ton/2,000 lb x

3 lb particulate/1 ton pigment

= 60 lb

The second method entails back-calculating the particulate emissions from the weight of the particulate collected in the baghouse with design efficiencies provided by the baghouse manufacturer. If reported values are not available, an efficiency of 98 to 99 percent should be assumed.

Most of the particulate matter released to air will become airborne during the dope preparation or blending operation. Based on the weight percent of the chemical of interest that enters the blender, the amount of specific chemical released to air in the form of particulates can be estimated as follows:

Amount of chemical released to air =

amount of particulate released to air x

weight percent of chemical entering the blender

Example: Using baghouse efficiency to estimate particulate emissions to air.

A polyester textile fiber manufacturing plant collected 250,000 pounds of particulates in the baghouse filters from the blending operations in 1987. The baghouse manufacturer claims a 99.3 percent efficiency for these filters. If the weight percent of titanium dioxide (TiO_2) in the fiber is 8 percent, the amount of this chemical released to the air can be calculated as follows:

Amount of TiO_2 released =

250,000 lb particulate collected x

(0.007/0.993) x

0.08 lb TiO_2/1 lb particulate

= 140 lb

Toxic Releases Via Wastewater

The solvent recovery system, equipment cleaning effluent, condensate, and washing stage effluent are all potential sources for water release. If plant monitoring data for the water releases are available for the chemicals of interest, the water releases can be calculated directly.

Data on solvent emissions to water are available for some dry and wet spinning processes, as shown in the table of solvent usage and emission factors on page 5. The estimates in the table giving losses to water include losses from the solvent recovery system, any washing stage, and equipment cleaning. The following example shows the use of these factors to estimate water releases.

Example: Using emission factors to estimate water releases.

A plant produced 120,000 kilograms of modacrylic in 1987 by dry spinning. Acetone was used as the solvent. Emission factors can be used to calculate acetone losses as follows:

Amount of acetone released to water =

120,000 kg fiber x

10 kg acetone/1,000 kg fiber x

2.2 lb/1 kg

= 2,640 lb

Using this approach, the plant in this example could report water releases of 2,600 pounds of acetone.

If your facility uses a listed mineral acid or base but this acid or base is effectively neutralized in use or during wastewater treatment (to pH 6 to 9, as required by most effluent standards), no release quantities should be reported for these substances.

If wastewater treatment occurs on site, you should adjust the total losses to yield the release. If available, use plant operating data on removal efficiency for this purpose. Published data also may be used, if such data are available for the specific chemical treated by the method used at your plant (for example, biological wastewater treatment). The amount of chemical released to water after wastewater treatment can thus be calculated as:

Amount of chemical released to water =

amount lost in process water x

(1 - removal efficiency)

If no data are available, assume treatment does not remove the chemical.

Toxic Releases Via Solid Waste

The possible sources of nonaqueous waste to be landfilled or otherwise disposed of include filter cakes, distillation fractions, spent catalyst, vessel and tank residues, and drums. Assuming that the monomer weight percent in the dope is known, the loss in the filter cake will be:

Amount of monomer in filter cake =

amount of filter cake x

weight percent of monomer

When a wastewater treatment plant is located on site, some chemicals will also be transferred from the liquid to sludge and some will be chemically or biologically destroyed or neutralized. Loss to the sludge will be:

Amount of chemical in sludge =

amount lost from process -

amount lost in water

Alternatively, you may have data on the concentration of chemicals in the sludge.

For organic chemicals in general, some degradation may occur during treatment so that all of the chemical is not transferred to the sludge. The amount of organic compounds in the sludge may be estimated by using measured data or by subtracting the amount biodegraded from the total amount removed in treatment. Removal may be determined from operating data, and the extent of biodegradation may be obtained from published studies. If the biodegradability of the chemical cannot be measured or is not known, you should assume that all removal is due to adsorption of sludge.

Other Toxic Releases

Monofilament fiber manufacturing produces other wastes from which toxic chemicals may be released. These include:

- **Residues from pollution control devices**
- **Wash water from equipment cleaning**
- **Product rejects**
- **Used equipment**
- **Empty chemical containers**

Releases from these sources may already have been accounted for, depending on the release estimation methods used. These

items (and any other of a similar nature) should be included in your development of a process flow diagram.

The contribution of sources of wastes such as cleaning out vessels or discarding containers should be small compared with process losses. If you do not have data on such sources (or any monitoring data on overall water releases), assume up to 1 percent of vessel content may be lost during each cleaning occurrence. For example, if you discard (to landfill) "empty" drums that have not been cleaned, calculate the release as 1 percent of normal drum content. If the drums are washed before disposal, this may contribute 1 percent of the content to your wastewater loading.

Step Five

Complete the Toxic Chemical Release Inventory Reporting Form.

After estimating the quantity of each chemical released via wastewater, solid waste, and air emissions, you must determine the amount of each chemical released to water, land, or air or transferred to an offsite disposal facility. This determination will be based on the disposal method you use for each of your waste streams. Enter the release estimates for each chemical or chemical category in Part III of the Toxic Chemical Release Inventory Reporting Form. Also enter the code for each treatment method used, the weight percent by which the treatment reduces the chemical in the treated waste stream, and the concentration of the chemical in the influent to treatment (see instructions). Report treatment methods that do not affect the chemical by entering "0" for removal efficiency.

For More Information

Emergency Planning and Community Right-to-Know Hotline	(800) 535-0202 or (202) 479-2449 (in Washington, D.C. and Alaska)
Small Business Ombudsman Hotline	(800) 368-5888 or (703) 557-1938 (in Washington, D.C. and Virginia)

The EPA brochure, Title III Section 313 Release Reporting Requirements (EPA 560/4-87-001) presents an overview of the new law. It identifies the types of facilities that come under the provisions of Section 313, the threshold chemical volumes that trigger reporting requirements, and what must be reported. It also contains a complete listing of the chemicals and chemical categories subject to Section 313 reporting. The EPA publication, Estimating Releases and Waste-Treatment Efficiencies for the Toxic Chemical Release Inventory Form (EPA 560/4-88-002), presents more detailed information on general release estimation techniques than is included in this document.

APPENDIX 2-7

SAMPLE EMISSION CROSS-REFERENCE

APPENDIX C

FACILITY GUIDELINE INDEX
("FACILITY LOOK-UP TABLE")

C-I
RESPONSIBILITIES OF ALL FACILITIES

C-II
FURTHER RESPONSIBILITIES FOR SPECIFIC FACILITY CLASSES

APPENDIX C-I
RESPONSIBILITIES OF ALL FACILITIES

Notes For Appendix C-I

(1) The following substance abbreviations are used throughout the index:

BaP	= Benzo[a]Pyrene
CFC-113	= Chlorinated fluorocarbon
EDB	= Ethylene dibromide
EDC	= Ethylene dichloride
ETO	= Ethylene oxide
Perc	= Perchloroethylene, Tetrachloroethylene
PCBs	= Polychlorinated biphenyls
PAHs	= Polycyclic aromatic hydrocarbons
TCA	= 1,1,1-Trichloroethane, Methyl chloroform
TCE	= Trichloroethylene

(2) The following Supplemental Process Parameter Reporting Form abbreviations are used throughout the index:

S-CMB	= Supplemental Combustion Form
S-CT	= Supplemental Cooling Tower Form
S-ETO	= Supplemental ETO Sterilizers Form
S-MP	= Supplemental Metal Plating Form
S-UP	= Supplemental Use/Production Form

(3) PAHs are composed of the following substances:

Acenaphthene	
Acenaphthylene	
Anthracene	
Benz[a]anthracene	**
Benzo[b]fluoranthene	**
Benzo[k]fluoranthene	**
Benzo[a]pyrene	**
Benzo[g,h,i]perylene	
Chrysene	
Dibenzo[a,h]anthracene	**
Fluoranthene	
Fluorene	
Indeno[1,2,3,-cd]pyrene	**
Naphthalene	**
Phenanthrene	
Pyrene	

** listed substances

(4) Substances emitted by a particular device or process may not be limited to those listed in Facility Guideline Index. ALL FACILITIES ARE RESPONSIBLE FOR IDENTIFYING AND ACCOUNTING FOR ANY LISTED SUBSTANCE USED, MANUFACTURED, FORMULATED, OR RELEASED; THIS APPENDIX IS NOT AN EXHAUSTIVE LIST.

(5) Nitrosamines refer to the following listed substances:
Dialkylnitrosamines
4-(Methylnitrosoamino)-1-(3-pyridyl)-1-butanone (NNK)
N-Methyl N'-nitro-N-nitrosoguanidine
p-Nitrosodiphenylamine
N-Nitrosodi-n-butylamine
N-Nitrosodiethanolamine
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitrosodi-n-propylamine
N-Nitroso-N-ethylurea
N-Nitrosomethylethylamine
N-Nitroso-N-methylurethane
N-Nitrosomethylvinylamine
N-Nitroso-N-methylurea
N-Nitrosonornicotine
N-Nitrosopiperidine
N-Nitrosopyrrolidine
N-Nitrososarcosine

(6) This Facility Guideline Index is arranged in alphabetical order. The first part of the index, Appendix C-I, lists devices common to many industries and the second part of the index, Appendix C-II, lists industry types. Extensive cross-referencing has been incorporated into the index, particularly in Appendix C-II, to identify industries and processes known by alternative names. It may be necessary to consult alternate names to locate a given industry type. Furthermore, more than one industry type may apply to a given facility. Column four of the index summarizes the Supplemental Process Parameter reporting forms that are likely to be necessary for reporting emissions from a particular industry type. (If the Device/Process category is extensive some of the forms listed with a main category heading may not be necessary for all processes listed under the main category heading.)

APPENDIX C-I
RESPONSIBILITIES OF ALL FACILITIES

ALL FACILITIES ARE RESPONSIBLE FOR IDENTIFYING AND ACCOUNTING FOR ANY LISTED SUBSTANCE USED, MANUFACTURED, FORMULATED, OR RELEASED; THIS APPENDIX IS NOT AN EXHAUSTIVE LIST.

All Facilities shall account for the following devices and emitting processes and associated emissions, and shall account for ANY OTHER PROCESS EQUIPMENT THAT MAY BE A SOURCE OF RELEASE OF ANY LISTED SUBSTANCE:

Device/Process	Types of Emissions	Specific Substances (see note 4)	Supplemental Process Parameter Reporting Form(s) to Use
FUEL/WASTE COMBUSTION			
Boilers, Heaters, Kilns IC Engines, Furnaces			S-CMB
Coal-fired	Particulate metals including but not limited to:	Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Manganese, Mercury, Nickel, Radionuclides, Selenium, Zinc And any other listed metals	
	Other particulate-phase substances including but not limited to:	BaP & other PAHs, Dibenzofurans, Dioxins, Phosphorus	
	Gaseous products including but not limited to:	Acetaldehyde, Benzene, Dichlorobenzenes, EDC, EDB, Formaldehyde, Hydrogen chloride, Hydrogen fluoride, Phenols	
Oil-fired Residual Distillate	As Above	Arsenic, BaP & other PAHs, Benzene, Beryllium, Cadmium, Chromium, Copper, Dioxins, Formaldehyde, Lead, Manganese, Mercury, Nickel, Radionuclides, Selenium, Zinc Any other listed metals	
Waste		Arsenic, Benzene, BaP & other PAHs, Beryllium, Cadmium, Chloroform, Chromium, Copper, Dibenzofurans, Dioxins, EDB, EDC, Manganese, Mercury, Methylene chloride, Nickel, Perc, PCBs, Toluene, TCA, TCE, Xylenes, Any other listed metals	
Natural gas-fired	As Above	Benzene, Formaldehyde, Any other listed metal	
Process gas-fired	As Above	Benzene, Formaldehyde, Phenol, Any other listed metal	
Solid Waste-fired	As Above	Formaldehyde, Manganese, Nickel, Phenol	
Wood-fired	As Above AND Any pesticides used on wood	Acetaldehyde, Arsenic, Benzene, BaP & other PAHs, Chromium, Copper, Dioxins, PCBs	
Other Liquid-fired	From boiler corrosion inhibitor	Nitrosomorpholine, Any other listed metals	

• See Note 3 (Notes appear at the beginning of this index.)

Device/Process	Types of Emissions	Specific Substances (see Note 4)	Supplemental Process Parameter Reporting Form(s) to Use
FUEL/WASTE COMBUSTION continued			
Coke Ovens		Benzene, Benzyl chloride, Coke oven emissions, Cresols, Dibenzofurans, Dioxins, PAHss, Nitrosamines	S-CMB
Flares	Particulate metals including but not limited to:	Arsenic, Beryllium, Chromium, Lead, Mercury, Nickel Any other listed metal	S-CMB
	Other particulate-phase substances including but not limited to:	BaP, Dibenzofurans, Dioxins	
	Gaseous products including but not limited to:	Aldehydes, Benzene, Dichlorobenzenes, EDB, EDC	
Landfill Gas Also see Boilers, Heaters, IC Engines, etc, Appendix C-1			
Incinerators - see ALL other combustion releases, but pay particular attention to the following:			S-CMB
	Particulate metals including but not limited to:	Arsenic, Beryllium, Cadmium, Chromium, Copper, Manganese, Mercury, Nickel, PAHss, Selenium, Zinc, Any other listed metal	
	Other particulate-phase substances including but not limited to:	BaP & other PAHss, Dibenzofurans, Dioxins, PCBs	
	Gaseous products including but not limited to:	Benzene, Dichlorobenzenes, EDB, EDC, Hydrogen chloride, Hydrogen fluoride, Vinyl chloride	
Cotton Gin Waste		Arsenic	
Hazardous Waste		Dioxins, Any other listed metals	
Hospital Waste		Dioxins, Radionuclides, Any listed metals	
Municipal Refuse		BaP & other PAHss, Beryllium, Cadmium, Chromium, Manganese, Mercury, Nickel	
Pathological		Dioxins	
Scrap Wood		BaP & other PAHss	
Sludge		Acrolein, Arsenic, Asbestos, Beryllium, Cadmium, Chromium, Dioxins, Manganese, Mercury, Nickel, PAHss, Any other listed metals	
Solid/Biomass Waste		Any listed metals	
Waste-To-Energy		Acrolein, Dibenzofurans, Dioxins, Manganese, Nickel, PAHss, Any other listed metals	

Device/Process	Types of Emissions	Specific Substances (see Note 4)	Supplemental Process Parameter Reporting Form(s) to Use
SOLVENT USE			
Miscellaneous Use		Acetaldehyde, Acrolein, Benzene, Carbon tetrachloride, CFC-113, Chlorobenzene, Chloroform, Cresols, Dimethyl sulfate, Dioxane, EDC, Mercury, Methanol, Methylene chloride, Nitrobenzene, Perc, Toluene, TCA, TCE, Xylenes, Any other listed chlorinated solvents	
Degreasing Operations	Gaseous and aerosol organic compounds including but not limited to:	Benzene, Carbon tetrachloride, Chlorinated fluorocarbon, Chlorobenzene, 1,4-Dioxane, Freons, Methylene chloride, Perc, Toluene, TCA, TCE, Any other listed substances	
Cleaning & Drying		Chlorinated fluorocarbons	
Metal D'grs		Methylene chloride, 1,4-Dioxane, TCA, TCE	
Oil, Wax, Fat Extracting		Carbon tetrachloride, Dichloroethane, Methylene Chloride	
Photoresist Stripping		Glycol ethers, Methylene chloride, Xylenes	
Vapor Degreasing		Perc, TCE	
Fabric Finishing (Woven)		1,4-Dichlorobenzene	
Floor Wax		Carbon tetrachloride	
Paint & Varnish Removal		Dioxane, Methylene chloride	
Polish (Shoe, Furniture)		Carbon tetrachloride	
Rubber Cement		Carbon tetrachloride	
Surface Coating	Gaseous and aerosol organic compounds including but not limited to:	Acetaldehyde, Benzene, Carbon tetrachlorides, Chlorobenzenes, Chloroform, Cresols, Dioxane, Methanol, Methylene chloride, Michler's ketone, Nitrobenzenes, 2-Nitropropane, Perc, Phenol, Phthalic anhydride, Styrene, Toluene, TCA, TCE, Xylenes	
From adhesives		Carbon tetrachloride, Chloroform, Methylene chloride, Toluene, TCE	
From wood finishing		Dioxane, Methylene chloride, Perc, Toluene	
From metal finishing		Perc, Toluene, TCA	

Device/Process	Types of Emissions	Specific Substances (see Note 4)	Supplemental Process Parameter Reporting Form(s) to Use
SOLVENT USE, Surface Coating, continued			
Resin Application Coating Application Flashoff Baking/Curing Quenching		Formaldehyde	
Storage & Handling – see Liquid Storage & Transfer, Appendix C-I			
LIQUID STORAGE & TRANSFER (Fugitive Emissions)			
Pipelines Petroleum	Gaseous and aerosol fugitives From: joints, valves	Benzene, Gasoline vapors, Toluene, Xylenes Transported listed substances	
Process Vents			
Tanks Petroleum Products Tank Breathing	Gaseous and liquid petroleum products including but not limited to:	Benzene, Dibromomethane, Dichloroethane, EDC, Gasoline vapors, Toluene, Xylenes Stored listed substances	
Tank Cars and Trucks Filling Tank Breathing	Gaseous, liquid and volatile solids including but not limited to:	Each pure organic stored or transferred that is a listed substance Each component of a mixture that is a listed substance	
Fugitives Equipment Leaks	Gaseous and aerosol organic compounds From: vents, tanks, condensers pumps, valves, compressors	Emissions vary according to substances involved in specific process	
OTHER PROCESSES			
Contaminated Soil/Water Remediation	Chlorinated organics including: Other organics including	Carbon tetrachloride, Chloroform, EDC, Methyl chloroform, Perc, TCA, TCE Benzene, Chlorobenzene, Toluene, Xylenes	
Cooling Towers Comfort Cooling	Gaseous and aerosol releases possibly containing additives and including but not limited to: In part due to drift loss	Chloroform, Chromium, Manganese, Nickel, Any other additives	S-CT

Device/Process	Types of Emissions	Specific Substances (see Note 4)	Supplemental Process Parameter Reporting Form(s) to Use
OTHER PROCESSES, Cooling Towers, continued			
Process Cooling	Gaseous and aerosol releases possibly containing additives and including but not limited to: In part due to drift loss	Chloroform, Chromium, Manganese, Nickel, Any other additives	
Drinking Water Trtment		Chloroform	
Industrial Wastewater Treatment	Chlorinated organics including:	Carbon tetrachloride, Chloroform, EDC, Methylene chloride, Perc, TCA, TCE	
	Other organics including:	Benzene, Chlorobenzene, Toluene, Xylenes	
On-site Fuel Dispensing	Gaseous and aerosol releases including but not limited to:	Benzene, Dibromoethane, Dichloroethane, EDB, EDC, Gasoline vapors, Toluene, Xylenes	
Pesticide Use		Arsenic, Carbon tetrachloride, Dibromoethane, 1,4-Dichlorobenzene, Dioxins, EDB, EDC, Lead, Nickel titanate, Zinc oxide	
Printing - see Solvent Use, Appendix C-I Also see Printing & Publishing, Appendix C-II			
Sterilizers		ETO, Formaldehyde, Lead, Toluene, Propylene oxide	S-ETO
Surface Coating	Pigments	Arsenic, Chromium oxide, Lead oxide, Mercury, Zinc oxide	
	Polymer & Resin Precursors Residues/Impurities	Acrylonitrile, 1,3-Butadiene, Ethyl acrylate, Formaldehyde, Phenol, Styrene, Vinyl chloride, Vinylidene chloride, Any other listed substances	
	Additives - Curing agents, Surfactants, Defoamers, Thickeners, Film-control agents Plasticizers	Ammonia	
Wastewater Treatment		Benzene, Chloroform, EDC, Methylene chloride, TCE, Vinyl chloride, Any other listed substances	
CONTROL EQUIPMENT	Emission reductions must be quantified: For each listed subst. & device		

APPENDIX C-II
FURTHER RESPONSIBILITIES FOR SPECIFIC FACILITY CLASSES

Notes For APPENDIX C-II

(1) The following substance abbreviations are used throughout the index:

BaP	= Benzo[a]Pyrene
CFC-113	= Chlorinated fluorocarbon
EDB	= Ethylene dibromide
EDC	= Ethylene dichloride
ETO	= Ethylene oxide
PAH	= Polynuclear aromatic hydrocarbons
Perc	= Perchloroethylene, Tetrachloroethene
POM	= Polycyclic organic matter
TCA	= 1,1,1-Trichloroethane, Methyl chloroform
TCE	= Trichloroethylene

(2) The following Supplemental Process Parameter Reporting Form abbreviations are used throughout the index:

S-CMB	= Supplemental Combustion Form
S-CT	= Supplemental Cooling Tower Form
S-ETO	= Supplemental ETO Sterilizers Form
S-MP	= Supplemental Metal Plating Form
S-UP	= Supplemental Use/Production Form

(3) PAHs are composed of the following substances:

Acenaphthene	
Acenaphthylene	
Anthracene	
Benz[a]anthracene	**
Benzo[b]fluoranthene	**
Benzo[k]fluoranthene	**
Benzo[a]pyrene	**
Benzo[g,h,i]perylene	
Chrysene	
Dibenzo[a,h]anthracene	**
Fluoranthene	
Fluorene	
Indeno[1,2,3,-cd]pyrene	**
Naphthalene	**
Phenanthrene	
Pyrene	

** Listed substances

(4) Substances emitted by a particular device or process may not be limited to those listed in Facility Guideline Index. ALL FACILITIES ARE RESPONSIBLE FOR IDENTIFYING AND ACCOUNTING FOR ANY LISTED SUBSTANCE USED, MANUFACTURED, FORMULATED, OR RELEASED; THIS APPENDIX IS NOT AN EXHAUSTIVE LIST.

(5) Nitrosamines refer to the following listed substances:

Dialkylnitrosamines
4-(Methylnitrosoamino)-1-(3-pyridyl)-1-butanone (NNK)
N-Methyl N'-nitro-N-nitrosoguanidine
p-Nitrosodiphenylamine
N-Nitrosodi-n-butylamine
N-Nitrosodiethanolamine
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitrosodi-n-propylamine
N-Nitroso-N-ethylurea
N-Nitrosomethylethylamine
N-Nitroso-N-methylurethane
N-Nitrosomethylvinylamine
N-Nitroso-N-methylurea
N-Nitrosonornicotine
N-Nitrosopiperidine
N-Nitrosopyrrolidine
N-Nitrososarcosine

(6) This Facility Guideline Index is arranged in alphabetical order. The first part of the index, Appendix C-I, lists devices common to many industries and the second part of the index, Appendix C-II, lists industry types. Extensive cross-referencing has been incorporated into the index, particularly in Appendix C-II, to identify industries and processes known by alternative names. It may be necessary to consult alternate names to locate a given industry type. Furthermore, more than one industry type may apply to a given facility. Column four of the index summarizes the Supplemental Process Parameter reporting forms that are likely to be necessary for reporting emissions from a particular industry type. (If the Industry/Emitting Process category is extensive some of the forms listed with a main category heading may not be necessary for all processes listed under the main category heading.)

APPENDIX C-II
FURTHER RESPONSIBILITIES FOR SPECIFIC FACILITY CLASSES

ALL FACILITIES ARE RESPONSIBLE FOR IDENTIFYING AND ACCOUNTING FOR ANY LISTED SUBSTANCE USED, MANUFACTURED, FORMULATED, OR RELEASED; THIS APPENDIX IS NOT AN EXHAUSTIVE LIST.

If a facility falls within one or more of the following specific industry types, the facility operator shall account for the following devices and emitting processes, fugitive releases, and their associated emissions, and shall account for ANY OTHER PROCESS EQUIPMENT THAT MAY BE A SOURCE OF RELEASE OF ANY LISTED SUBSTANCE:

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Specific Substances (see Note 4)	Supplemental Processes Parameter Reporting Form(s) to Use
Adhesives Application - see Solvent Use and Other Processes, Appendix C-I			
Adhesives Mfg - see Chemical Mfg, Appendix C-II			
Aerospace Products Mfg.			
Research - see Chemical Mfg and Research & Development, Appendix C-II			
Surface Coating - see Solvent Use & Other Processes, Appendix C-I			
Agricultural Production		Ammonia, Chlorine, EDB, Hydrogen Sulfide, Lead, Silica, All listed metals	S-CMB
Agricul Chem Mfg - see Chemical Mfg, Appendix C-II			
Cotton Ginning		Ammonia, Arsenic	
Pesticide Use - see Other Processes, Appendix C-I			
Waste Burning - see Combustion, Appendix C-I			
Aircraft Mfg - see Transportation Equipment Mfg, Appendix C-II			
Airports - see Transportation Stations, Appendix C-II			
Air Stripping - see Contaminated Soil/Water Remediation, Appendix C-I			
Almond Processing		Arsenic	S-CMB
Combustion Processes - see Combustion, Appendix C-I			
Apparel Mfg - see Textile Mill, Appendix C-II			
Arsenic Mining - see Mining Non-Metals, Appendix C-II			
Artificial Flower Mfg		Toluene	
Asbestos Milling/Processing - see Clay, Glass, & Stone Prod, Appendix C-II			
Asbestos - see Mining Non-Metals, Appendix C-II			

• See Note 3 (Notes appear at the beginning of this index.)

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Asphalt Mat'ls Mfg			
Asphalt Felts & Ctgs - see Petroleum & Coal Products, Appendix C-II			
Asphalt Paving Mat'ls Mfg			S-CMB
Batch Plants	Particulate Phases Substances	Asbestos, Benzene, Formaldehyde, Organics, PAHs, Toluene, TCA, Xylenes, All listed metals	
Paving Operations			
Combustion Processes - see Combustion, Appendix C-I			
Surface Coating - see Solvent Use & Other Processes, Appendix C-I			
Storage & Handling - see Liquid Storage & Transfer, Appendix C-I			
Auto Repair, Svc'e & Garages - see Transportation Equipment, Appendix C-II			
Auto Parts Mfg - see Transportation Equipment, Appendix C-II			
Battery Production - see Metal Smeltors, Appendix C-II			
Beryllium Mining - see Metal Smeltors, Appendix C-II			
Bicycle Mfg/Rpr - see Transportation Equipment, Appendix C-II			
Boat Bldg/Rpr - see Transportation Equipment (Ship & Boat Bldg), Appendix C-II			
Box Mfg (folding paperboard type) - see Wood Product Mfg, Paper, Paperboard Containers & Boxes, Appendix C-II			
Bulk Plants and Terminals	Gaseous and aerosol releases including but not limited to:	Benzene, Gasoline vapors, Specific Stored Substances listed in Appendix A-I or A-II	
Barrel Breathing	From fixed roof tanks		
Barrel Filling	From var. vapor sp. tanks		
Barrel Standing	From floating roof tanks		
Barrel Withdraw	From floating roof tanks		
Valves, Vapor Collect/Control	From flanges, pumps, and tank trucks		
Burial Caskets Mfg		Toluene	
Burning of Solid Waste (Open) - see Combustion, Appendix C-I			
Bus Mfg/Rpr - see Transportation Equipment, Appendix C-II			
Button Mfg		Formaldehyde, Styrene, Toluene, TCE	
Cadmium Plating - see Metal Plating, Appendix C-II			
Camper & Trailer Mfg - see Transportation Equipment, Appendix C-II			
Can Mfg - see Metal Product Fabrication, Appendix C-II			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Canned Food Product Mfg.			S-CMB, S-ETO
Can Fabrication - see Metal Product Fabrication, Metal Cans, Appendix C-II			
Combustion Processes - see Combustion, Appendix C-I			
Food Processing - see Food Product Mfg, Appendix C-II			
Paper Labeling - see Wood Product Mfg, Appendix C-II			
Printing - see Printing & Publishing, Appendix C-II			
Sterilization - see Other Processes, Appendix C-I			
Surface Coating - see Solvent Use And Other Processes, Appendix C-I			
Car Mfg/Rpr - see Transportation Equipment, Appendix C-II			
Carbon Black & Charcoal Mfg - see Chemical Mfg, Carbon, Appendix C-II			
Cement Mfg - see Clay, Glass, & Stone Prod Mfg, Appendix C-II			
Ceramic Plants		Beryllium	S-CMB
Combustion Processes - see Combustion, Appendix C-I			
Charcoal Mfg - see Carbon, Appendix C-II			
Chemical Mfg	Gaseous and aerosol releases including but not limited to: From process reactor vessel fugitive, storage, handling, ducted building exhaust	Any of the following types of chemicals, listed in Appendix A-I or A-II: FEEDSTOCK CHEMICAL(S) MANUFACTURED CHEMICAL(S) BY-PRODUCT CHEMICALS	S-CMB, S-CT, S-ETO, S-UP
Also see Combustion, Other Processes, Solvent Use, and Storage & Handling, Appendix C-I			
Miscellaneous		Ammonia, Bis(chloromethyl) ether, Carbon tetrachloride, Chlorine, Chloroform, Copper, Cresol, ETO, Formaldehyde, Hydrogen chloride, Lead, Methylene chloride, Naphthalene, Phenol, Toluene, Toluene diisocyanate, TCA	
Acids Mfg		Acetaldehyde, Acrolein, Copper, Cresols, Hydrochloric acid, Phenol, Toluene, Xylenes	
Adhesives & Sealants Mfg		Ammonia, Arsenic, Asbestos, Benzene, 1,4-Dioxane, EDC, Lead, Methylene chloride, Nitrosomorpholine, Toluene, TCA, TCE, Xylenes	
Aerospace Chem Mfg		Chloroform, EDC, Phosgene, Toluene	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Chemical Mfg continued			
Agricultural Chem Mfg			
Miscellaneous		Acetaldehyde, Acrolein, Acrylonitrile, Ammonia, Arsenic, Benzene, 1,3-Butadiene, Cadmium, Carbon tetrachloride, Chlorine, Chlorobenzene, Chloroform, Copper, Cresol, 1,4-Dichlorobenzene, Dimethyl sulfate, EDC, EDB, ETO, Formaldehyde, Hexachlorobenzene, Hexachlorocyclopentadiene, Hydrazine, Hydrogen chloride, Hydrogen sulfide, Lead, Maleic anhydride, Mercury, Methyl bromide, Methyl isocyanate, Methylene chloride, Naphthalene, Phenol, Phosgene, Phthalic anhydride, Vinyl chloride, Xylenes, Zinc, Zinc oxide	
Alkali Mfg - see Chemical Mfg, Industrial Inorganics, Appendix C-II			
Fertilizers		Ammonia, Hydrogen sulfide, Mercury, Metal compounds, Methanol, Phosphorus, Sodium hydroxide	
Nitrogenous		Ammonia, Cadmium, Hydrogen sulfide, Lead Nickel	
Phosphatic		Ammonia, Arsenic, Cadmium, Hydrogen sulfide	
Mixing Only		Ammonia	
Sodium Arsenate		Arsenic	
Aldehyde Mfg		Aldehydes, Toluene	
Anti corrosives Mfg		Cresols, Hydrazine	
Bases Mfg		Ammonia, Hydrazine, Sodium hydroxide	
Carbon Black & Charcoal Mfg		Ammonia, BaP & other PAHs, Formaldehyde, Hydrogen sulfide Any other listed metals	S-CMB
Combustion Processes - see Combustion, Appendix C-I			
Chemical Preparations		Ammonia, Arsenic, Benzene, Cadmium, Chlorine, Chromium, Copper, Formaldehyde, Hexachlorocyclopentadiene, Hydrazine, Hydrogen chloride, Hydrogen sulfide, Lead, Maleic anhydride, Methyl isocyanate, Methyl methacrylate, Pero, Radionuclides, Styrene, Toluene, TCE, Vinyl chloride, Xylenes, Zinc, Zinc oxide	
Chlorine (Electrolytic)			
Production	From: hydrogen stream	Mercury	
Also see Chem Mfg, Indust Inorg, Alkalies & Chlorine, Appendix C-II			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Chemical Mfg continued			
Drug/Pharmaceutical Mfg			
Miscellaneous		Acrylonitrile, Allyl chloride, Ammonia, Arsenic, Benzene, Benzyl chloride, Carbon tetrachloride, Chlorine, Chlorobenzene, Chloroform, Chromium, 1,4-Dichlorobenzene, Dimethyl sulfate, 1,4-Dioxane, Epichlorohydrin, EDB, EDC, Formaldehyde, Hydrazine, Hydrogen chloride, Lead, Mercury, Methanol, Methyl methacrylate, Methylene chloride, Perc, Phenol, Phosgene, Styrene, Toluene, TCA, TCE, Vinylidene chloride, Xylenes, Zinc, Zinc oxide	
Biological Products Medicinals & Botanicals		Arsenic, Benzene, EDC, Lead, TCA	
		Acrylonitrile, Ammonia, Arsenic, Benzene, Carbon tetrachloride, Chloroprene, Chlorine, EDC, Formaldehyde, Hydrogen chloride, Lead, Mercury, Methyl bromide, Methyl methacrylate, Methylene chloride, Phenol, Styrene, Toluene, Vinylidene chloride	
Blender			
Combustion Processes - see Combustion, Appendix C-I			
Drying Ovens			
Formulator			
Other Process Reactors			
Solvents - see Solvent Use, Appendix C-I			
Sterilizers - see Sterilizers, Appendix C-I			
Tanks - see Liquid Storage & Transfer, Appendix C-I			
Dyes Mfg		Benzene, Benzidine, Benzyl chloride, Chlorobenzenes, Chloroform, Cresols, Dichloromethane, Dimethyl sulfate, Dioxane, C.I. Direct Black 38, Hydrazine, PAHs, TCE, Vinyl chloride, Vinylidene chloride	
Elastomer & Surfactant Mfg			
Batch Processes		Epichlorohydrin	
Ethers Mfg		Dimethyl sulfate, Nitrobenzene, Propylene oxide	
Ethylene dichloride Pro			
Oxychlorination	From: vents, storage	Carbon tetrachloride, Chloroform, ethylene dichloride	
Air & Oxygen Proc			
Explosives		Acetaldehyde, Ammonia, Arsenic, Formaldehyde, Lead, Mercury, Nitrobenzene, Phenol, Toluene	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Chemical Mfg continued			
Fertilizers - see Chemical Mfg (Agricultural), Appendix C-II			
Flame Retardants Mfg		Hexachlorocyclopentadiene	
Fluorocarbon Mfg		Carbon Tetrachloride, Chloroform	
Reactor Venting	From: vents, storage		
Distillation			
Storage			
Indust Inorg Chem Mfg			
Miscellaneous		Acetaldehyde, Acrolein, Acrylonitrile, Allyl chloride, Ammonia, Arsenic, Asbestos, Benzene, Benzidine, Benzyl chloride, 1,3-Butadiene, Cadmium, Carbon tetrachloride, CFC 113, Chlorine, Chlorobenzene, Chloroform, Chromium, Copper, 1,4-Dichlorobenzene, Epichlorohydrin, EDB, EDC, ETO, Formaldehyde, Freon 113, Gasoline vapors, Hexochlorobenzene, Hexachloropentadiene, Hydrogen chloride, Hydrogen sulfide, Lead, Maleic anhydride, Manganese, Mercury, Methyl isocyanate, Methyl methacrylate, Methylene chloride, Naphthalene, Nickel, Nitrobenzene, Nitrosomorpholine, Perc, Phenol, Phosgene, Phosphorus, Phthalic anhydride, PCBs, Propylene oxide, Radionuclides, Styrene, Toluene, Toluene diisocyanate, TCA, TCE, Vinyl chloride, Vinylidene chloride, Xylenes, Zinc, Zinc oxide	
Alkalies & Chlorine		Ammonia, Arsenic, Asbestos, Benzene, 1,3-Butidiene, Carbon tetrachloride, Chlorine, Chlorobenzene, Chloroform, Formaldehyde, Hydrogen chloride, Mercury, Phosgene, Toluene, TCE, Vinyl chloride, Vinylidene chloride	
Cyclic Crudes & Intermediates		Acetaldehyde, Acrolein, Acrylonitrile, Ammonia, Arsenic, Benzene, Benzidine, Benzyl chloride, 1,3-Butadiene, Carbon tetrachloride, Chlorine, Chlorobenzene, Chloroform, Chromium, Cresol, Dibenzofurans, one, 1,4-Dichlorobenzene, 3,3'-Dichlorobenzidene, Dimethyl sulfate, 1,4-Dioxane, EDC, Formaldehyde, Gasoline vapors, Hexachlorobenzene, Hydrazine, Hydrogen chloride, Hydrogen sulfide, Maleic anhydride, Methyl bromide, Methyl isocyanate, Methylene chloride, Naphthalene, Nitrobenzene,	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Chemical Mfg, Cyclic Crudes, continued			
		Nitrosomorpholine, Pentachlorophenol (Chlorophenols), Phenol, Phosgene, Phthalic anhydride, PAHs, Styrene, Toluene, Toluene diisocyanate, TCE Xylenes, Vinyl chloride	
Gum & Wood Chems		Arsenic, Benzene, BaP & other PAHs, Chromium, Formaldehyde, Naphthalene, Toluene diisocyanate	
Wood Chem Mfg Cresol Cresylic Acid Phenol		Cresols, Phenol, Xylenes	
Industrial Gases		Arsenic, Beryllium, Carbon tetrachloride, ETO, Hydrogen chloride, Mercury	
Pigments, Inorgan		Ammonia, Arsenic, Cadmium, Chloroform, Chromium, Copper, Dimethyl sulfate, 1,4-dioxane, Hydrazine, Hydrogen chloride, Lead, Zinc, Zinc oxide	
Inks			
Miscellaneous		Dioxane, Toluene	
Printing		Ammonia, Arsenic, Benzene, Cadmium, Copper, Formaldehyde, Lead, Perc, Toluene, Vinyl chloride, Xylenes, Zinc	
Metal Chelating Agent Mfg Corrosion Inhib, Metal Treatment Chems		Cupferron, Thiourea	
Methionide Analogs Prod (poultry feed supp.)		Acrolein	
Methyl Chloroform Prod	From: hydrochlorinated vent condenser, steam stripper vent condenser	Ethylene dichloride	
Military Chem Prod		Chloroform, EDC, Phosgene, Toluene	
Monomers			
Miscellaneous		Acetaldehyde, Acrylonitrile, Ammonia, Benzene, 1,3-Butadiene, Carbon tetrachloride, Chlorine, Chlorofluorocarbons, Dioxane, Epichlorohydrin, Ethyl chloride, EDB, EDC, ETO, Formaldehyde, Glycol ethers, Hydrochloric acid, Isocyanates, Maleic anhydride, Methyl bromide, Methyl methacrylate, Methylene chloride, Naphthalene, Nitrobenzene, Perc, Phenol, Phthalic anhydride,	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Chemical Mfg, Monomers, continued			
	Vinyl Chloride From: heavy ends stream	PCBs, Propylene, Propylene oxide, Sodium hydroxide, Styrene, Toluene, TCA, TCE, Trichlorophenol, Urethane, Vinyl chloride, Vinylidene chloride, Xylenes, Zinc	
		EDC	
Nuclear Fuel Fabricat'n		Radionuclides	
Organic Chem Mfg		Acrylamide, Acrylonitrile, Carbon tetrachloride, Chlorobenzene, Chloroform, Methylene chloride, Perc, Toluene	
Paints & Allied Prod's		Acetaldehyde, Ammonia, Arsenic, Asbestos, Benzene, Butadiene, Carbon tetrachloride, Chloroform, Chlorophenols, Chromium, Copper, Cresol, 1,4-Dioxane, Epichlorohydrin, Formaldehyde, Glycol ethers, Lead, Mercury, Methyl methacrylate, Methylene chloride, Naphthalene, Nickel, Nitrobenzene, Perc, Phenol, Phthalic anhydride, Styrene, Toluene, Toluene diisocyanate, TCA, TCE, Zinc, Zinc oxide	
	Pigment	Benzyl chloride, Cadmium, Toluene	
Perfume		Dimethyl sulfate	
Pesticides, Herbicides, Fungicides Mfg		Arsenic, Benzene, Carbon tetrachloride, Chlorine, Chlorobenzene, Chloroform, Chloropicrin, Cresols, 1,4-Dichlorobenzene, Dimethyl sulfate, Dioxins, EDB, Hexachlorocyclopentadiene, Hydrazine, Hydrocyanic acid, Isocyanates, Lead arsenate, Methyl bromide, Naphthalene, N-Nitrosodimethylamine, Phenol, Phosphorus	
Photographic Chemicals Mfg		Methylene chloride	
Pigment (metal containing) Mfg Also see Chem Mfg, Inks and Paints, Appendix C-II		Cadmium, Chromium, Copper, Lead, Nickel, Zinc	
Plastics Materials & Synthetics		Acrylamide, Acrylonitrile, Acrolein, Ammonia, Arsenic, Benzene, Benzidine, Cadmium, Carbon tetrachloride, Chlorine, Chlorobenzene, Chloroform, Chromium, Cresols, Dichloromethane, Dioxins, Formaldehyde, Hydrazine, Hydrocyanic acid, Hydrochloric acid, Hydrogen fluoride, Hydrogen sulfide, Isocyanates, Mercury, Methylene chloride, Nickel, Perc, Phenol, Phosgene, PAHs, Sodium hydroxide, Toluene, TCE, Vinyl chloride, Vinylidene chloride, Zinc	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Chemical Mfg, Plastics, continued			
Cellulosic Man-Made Fibers		Ammonia, Arsenic, Benzene, Chlorine, Chlorine, EDC, Hydrogen chloride	
Organic Fibers, noncellulosic		Acrylonitrile, Copper, Dimethyl sulfate, EDC, Toluene diisocyanate, Vinylidene chloride	
Plastics/Resins		Acetaldehyde, Acrolein, Acrylonitrile, Allyl chloride, Ammonia, Arsenic, Asbestos, Benzene, 1,3-Butadiene, Cadmium, Carbon tetrachloride, Chlorine, Chloroethane, Cresol, Epichlorohydrin, EDC, ETO, Formaldehyde, Gasoline vapors, Hydrogen chloride, Hydrogen sulfide, Lead, Maleic anhydride, Mercury, Methyl methacrylate, Methylene chloride, Nitorbenzene, Perc, Phenol, Phosgene, PCB, Propylene oxide, Styrene, Toluene, Toluene diisocyonate, TCE, Vinyl chloride, Vinylidene chloride, Xylenes, Zinc oxide	
Resin Mfg.		Acrylamide, Acrylonitrile, Ammonia, Benzene, Bis(chloromethyl) ether, Cresols, Dioxins, Epichlorohydrin, Formaldehyde, Hexachlorocyclopentadiene, Maleic anhydride, Phenol, Vinylidene chloride, Xylenes	
Rubber Product'n & Compounding	Gaseous, Aerosol, & Particulate releases including but not limited to:		
Synthetic Monomers		Acrylonitrile, 1,3-Butadiene, Chloropyrene, Epichlorohydrin, Ethyl acrylate, EDC, ETO, Propylene, Styrene	
Retardants		n-Nitrosodiphenylamine, Phthalic anhydride	
Catalysts		Nickel	
Solvents		Toluene	
Miscellaneous		Acetaldehyde, Acrylonitrile, Allyl chloride Ammonia, Benzene, Benzidine, 1,3-Butadiene, Carbon tetrachloride, Chlorine, Chloroform, Chloroprene, 3,3-Dichlorobenzidine, Epichlorohydrin, EDC, Hydrogen chloride, Lead, Maleic anhydride, Methylene chloride, Nitrosomorpholine, Perc, Sodium hydroxide, Styrene, Toluene, Toluene diisocyanate, Vinylidene chloride	
Also see Chem Mfg, Monomers, Appendix C-II			
Synthetic Fibers		Hydrogen sulfide	
Polish & Wax Mfg		Chloroform, Dioxane, Nitrosomorpholine	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Chemical Mfg continued			
Preservatives, disinfectants, biocides -		Cresols, Formaldehyde, Mercury, Phenol, 2,4,5-Trichlorophenol, Zinc Oxide	
Rubber, Non-Vulcanized, Mfg		Dioxins, Formaldehyde, Phenols	
Rubber Compounding	Processing Aids	Zinc	
	Accelerators	Ethylene thiourea, n-Nitrosodimethylamine, Zinc	
	Age Resterers	Nickel, Phenol	
	Vulcanizing Agents	Lead, Selenium, Zinc	
	Accelerator Activators	Zinc, Lead, Ammonia	
		Chloroform, Dioxins, Formaldehyde	
Solvents Mfg		Glycol ethers, Methanol, Dioxane	
Soap, Cleaners, & Toilet Goods		Ammonia, Chlorine, Hydrogen chloride	
Soap & Detergent Mfg			
Miscellaneous		Benzene, EDC, ETO, Formaldehyde, Hydrogen sulfide, Methyl methacrylate, Toluene	
Optical Brightners		Nitrosomorpholine	
Polishes & Sanitation Goods		Ammonia, Arsenic, Benzene, Carbon tetrachloride, Chlorine, Chloroform, Cresol, 1,4-Dichlorobenzene, 1,4-Dioxane, Epichlorohydrin, Formaldehyde, Hydrogen chloride, Methylene chloride, Nitrobenzene, Pero, Toluene, TCA, TCE, Zinc, Zinc oxide	
Surface Active Agts		Benzene, Benzyl chloride, 1,4-Dioxane, Propylene oxide, Toluene, Zinc, Zinc oxide	
Toilet Preparations		Acetaldehyde, Acrolein, Ammonia, Arsenic, Benzene, Benzyl chloride, CFC-113, Dimethyl sulfate, 1,4-Dioxane, Formaldehyde, Methylene chloride, Pero, Toluene, TCA, TCE, Zinc, Zinc oxide	
Textile Chemical Mfg		Acetamide, 2,4-Diaminoanisole, 2,4-Diaminoanisole sulfate, Urethane	
Varnish Mfg		Benzene, Dioxane	
(High)-Vinylidene Chloride Copolymer Fabric Process		Vinylidene Chloride	
Wax Mfg - see Polish Mfg, Appendix C-II			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Chemical Mfg continued			
Wood Chem Mfg - see Chem Mfg, Indus Inorgan, Gum & Wood, Appendix C-II			
Chemicals, Sales		Ammonia, Benzene, 1,3-Butadiene, Hydrogen chloride, Methylene chloride, Styrene, Toluene, TCA, Vinyl chloride	
Storage & Handling - see Liquid Storage & Transfer, Appendix C-I			
Chrome Plating - see Metal Plating, Appendix C-II			
Clay, Glass & Stone Pro			
Miscellaneous		Ammonia, Arsenic, Cadmium, Chlorine, Chromium, Hydrogen chloride, Lead, Mercury, Nickel, Silica, Toluene, TCA, TCE	S-CMB, S-CT
Abrasive Products		Ammonia, Cadmium, Chlorine, Chromium, Formaldehyde, Hydrogen chloride, Lead, Manganese, Methylene chloride, Perc, Phenol, Styrene, Toluene, TCA, Xylenes, Zinc	
Asbestos Mill/Processing		Asbestos, Benzene, Chromium, Copper, Nickel, Silica Formaldehyde, Hydrogen sulfide, Naphthalene, TCA, Xylenes	
Cement Products			
Floor Tile			
Friction Material			
Textiles			
Cement Mfg	Particulate, Gaseous, Aero Emis including but not limited to: From stacks, feed to mill & air separator, kiln, dryers, grinders	Asbestos, BaP, Benzene, Beryllium, Cadmium, Chromium, Copper, Formaldehyde, Hydrogen chloride, Lead, Manganese, Nickel, PCBs, PAHs, Zinc, All listed metals	S-CMB
Clinker Cooler			
Combustion Processes		Benzene, Formaldehyde, Hydrogen chloride, PCBs, PAHs, All listed metals	
Also see Combustion, Appendix C-I			
Dry Processes			
Hydraulic		Arsenic, Cadmium, Chlorine, Chromium, Copper, Hydrogen chloride, Lead, Mercury, Nickel, Toluene, Zinc	
Wet Process			
Clay Products, Structrl			
Brick & Structrl Clay Tile		Arsenic, Beryllium, Lead	
Ceramic Wall & Floor Tile		Arsenic, Beryllium, Lead	
Clay Refractories		Beryllium, Chromium, Mineral fibers	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Clay, Glass & Stone Pro continued			
Concrete, Gypsum, & Plaster Products			
Concrete Block & Brick		Chromium, Styrene	
Concrete Products		Ammonia, Chromium, Gasoline vapors, Toluene, Zinc	
Ready-mixed Concrete		Asbestos, Hydrogen sulfide	
Lime		Mercury	
Cut Stone & Stone Prod		TCE	
Flat Glass		Ammonia, Arsenic, Cadmium, Chlorine, Chromium, Hydrogen, Nickel, Toluene	
Gaskets, Packing, & Sealing Devices		Ammonia, Asbestos, Chlorobenzene, Gasoline vapors, Hydrogen chloride, Lead, Toluene, TCE, Zinc	
Glass & Glassware, Pressed & Blown		Ammonia, Arsenic, Cadmium, Chlorine, Chromium, Formaldehyde, Hydrogen chloride, Lead, Mercury, Methylene chloride, Nickel, Pero, Styrene, Toluene, TCA	
Glass Container Mfg	From glass furnace	Arsenic	
		Arsenic, Chlorine, Hydrogen chloride, Methylene chloride	
Minerals, Ground or Treated		Chlorine, Chromium, Copper, Gasoline vapors, Hydrogen chloride	
Mineral Wool Prod		Ammonia, Carbon tetrachloride, Formaldehyde, Mineral fibers, Phenol	
Nonclay Refractories		Ammonia, Beryllium, Chromium, Formaldehyde, Hydrogen chloride, Mineral fibers, Phenol, Zinc, Zinc oxide	
Nonmetallic Mineral Prod		Chlorine, Copper, Hydrogen chloride, Mineral fibers, Styrene, Toluene	
Pottery & Related Prod		Lead, TCA	
Vitreous Plumbing Fixtures		Styrene, Toluene	
Fine Earthen Food Utensils		Ammonia, Beryllium, Copper, Hydrogen sulfide, Lead, Methyl bromide, Naphthalene, Pero, Toluene, TCE, Zinc	
Purchased Glass Products		Ammonia, Toluene, TCE, Xylenes	
Combustion Processes - see Combustion, Appendix C-I			
Other Processes - see Other Processes, Appendix C-I			
Coal Combustion - see Combustion, Appendix C-I			
Coal, Wholesaling		Zinc, Zinc oxide	
Coke Combustion - see Combustion, Appendix C-I			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Coke Production Also see Metal Smelters, Appendix C-II		PAHs, Toluene	S-CMB
Colleges & Universities Miscellaneous		Benzene, Carbon tetrachloride, Chloroform, Methylene chloride, Dioxane, Formaldehyde, Mercury, Nitrobenzene, Phenol, Toluene, TCA, Xylenes, Any other listed substance	S-CMB, S-CT, S-ETO, S-UP
Also see Chem Mfg, Appendix C-II Combustion, Appendix C-I Research & Development, Appendix C-II Solvent Use, Appendix C-I			
Combustion Processes - see Combustion, Appendix C-I			
Commercial/Institutional Combustion - see Combustion, Appendix C-I			
Cooling Towers - see Other Processes, Appendix C-I			
Correctional Institutions - see Combustion, Appendix C-I			
Cotton Ginning - see Agricultural Prod, Appendix C-II			
Crop Production - see Agricultural Prod, Appendix C-II			
Dry Cleaning Operations		Chlorinated Fluorocarbon, EDC, Perc, Toluene, TCA, TCE	
Dyeing of Textiles	Gaseous, aerosol, and particulate releases, including but not limited to: Due to toxics in the solutions Fixatives Oxidizing Agents Dyeing Aids	Dyes - Auromine, Direct Black 38, Copper, Chromium Copper, Chromium Chromium Formaldehyde, Perc, Sodium hydroxide (caustic soda)	S-CMB
Combustion Processes - see Combustion, Appendix C-I			
Elec. or Nat'l Gas Service Combustion Processes - see Combustion, Appendix C-I Cooling Towers - see Other Processes, Appendix C-I		TCA	S-CMB, S-CT
Electrical Assembly Cleaning - see Degreasing, Appendix C-I			
Electrical & Electronic Equip Miscellaneous		Freon 113, Methylene chloride, Perc, TCA, TCE	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Electric & Electronic Equip continued			
Communication Equipment			
Radio & TV Communication Equipment		Ammonia, Benzene, Chlorine, Copper, Formaldehyde, Hydrogen chloride, Hydrogen sulfide, Lead, Methylene chloride, Perc, Toluene, Toluene diisocyanate, TCA, TCE, Xylenes, Zinc	S-CMB
Telephone & Telegraph Apparatus		Ammonia, Copper, Formaldehyde, Hydrogen chloride, Methylene chloride, Perc, Styrene, Toluene, TCA, TCE, Xylenes	
		Ammonia, Naphthalene, Toluene, TCA, TCE	
		Ammonia, Beryllium, Hydrogen chloride, Lead, Methylene chloride, Naphthalene, Perc, PCB, Toluene, TCA, TCE, Vinyl chloride, Xylenes, Zinc oxide	
Electric Distrib Equip			
Transformers		Ammonia, Formaldehyde, Hydrogen chloride, Perc, Toluene, TCA, TCE	
Switchgear & Switchboard Apparatus		Ammonia, Arsenic, BaP, Copper, Hydrogen chloride, Lead, Mercury, Perc, PCB, Toluene, TCA, TCE	
		Ammonia, Formaldehyde, Hydrogen chloride, Lead, Naphthalene, Phenol, Styrene, Toluene, TCA, TCE	
		Ammonia, Styrene, Toluene, TCA, TCE	
Electrical Industrial Apparatus			
Motors & Generators		Nickel, Toluene	
		BaP, Chlorine, Hydrogen chloride, Hydrogen sulfide, Styrene	
Industrial Controls			
Welding Apparatus, Electric			
Carbon & Graphite Products		Acetaldehyde, Ammonia, Arsenic, Benzene, Benzyl chloride, Beryllium, Cadmium, Chlorine, Chloroform, Chromium, Copper, Epichlorohydrin, EDC, Formaldehyde, Gasoline vapors, Hydrazine, Hydrogen chloride, Hydrogen sulfide, Lead, Manganese, Mercury, Methylene chloride, Naphthalene, Nickel, Perc, Phenol, Phosgene, PCB, Styrene, Toluene, Toluene diisocyanate, TCA, TCE, Xylenes, Zinc, Zinc oxide	
Electronic Components & Accessories			
Batteries			
Primary, Dry & Wet		Cadmium, Lead, Naphthalene, Nickel, Zinc, Zinc Oxide	
Storage		Beryllium, Cadmium, Lead, Manganese, Nickel, TCA, Zinc, Zinc oxide	
Cat'd Ray Pict'r Tubes		Beryllium, Lead	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Electric & Electronic Equipment Prod continued			
Electron Tubes, Transmitting		Ammonia, Benzene, Beryllium, Cadmium, Chromium, Copper, Hydrogen chloride, Lead, Nickel, Styrene, Toluene, TCE, Xylenes	
Electron Capacitors		Allyl chloride, Chromium, Epichlorohydrin, Lead, Methylene chloride, TCA, TCE	
Integrated Circuit Board Mfg	From: developer, stripper screening-hardener	Butyl cellosolve (a Glycol ether)	
		Formaldehyde, Methylene chloride	
Semiconductors & Related Devices		Acetone, Ammonia, Arsene, Arsenic, Beryllium, Chlorine, Chlorobenzene, Ethylene glycol, Hydrazine, Hydrochloric acid, Hydrogen chloride, Hydrogen fluoride, Lead, Mercury, Methanol, Methylene chloride, Nickel, Perc, Phenol, Phosphene, Styrene, Toluene, Toluene diisocyanate, TCA, TCE, Xylenes, Zinc	
Solvent Stations - see Liquid Storage & Transfer, Appendix C-I			
Wet Chemical Stations			
Mfg Process Reactors (Siliconizing)			
Chemical Vapor Deposition			
Diffusion Furnaces - see Combustion, Appendix C-I			
Photoresist Lines			
Surface Coating/Cleaning - see Solvent Use, Appendix C-I			
Household Appliances			
Elec Housewares/Fans		Beryllium, Toluene	
Household Cooking Equipment		TCA, TCE	
Household Laundry Equipment		Perc, Toluene	
Household Refrigerators & Freezers		Toluene	
Sewing Machines		Toluene, TCA	
Electric Lighting & Wiring Equipment		Toluene, TCE	
Electric Lamps		Ammonia, Cadmium, Mercury, Toluene, TCA, TCE	
Lighting Fixtures			
Commercial		Toluene, TCA	
Residential		Ammonia, Hydrazine, Toluene, TCA, TCE	
Wiring Devices			
Current-Carrying		Ammonia, Copper, Formaldehyde, Hydrogen chloride, Manganese, Methylene chloride, Nickel, Perc, Phenol, Toluene, Toluene diisocyanate, TCA, TCE, Zinc	
Noncurrent-Carry		Copper, Hydrogen chloride, Styrene, Toluene, TCE, Vinyl chloride, Zinc	
Radio & TV Rec'ving Sets		Ammonia, Toluene, TCA, TCE, Xylenes	
Semiconductor Production - see Electric & Electronic Equip, Integrated Circuit, Appendix C-II			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Electric & Electronic Equip continued			
X-Ray Apparatus & Tubes		Beryllium, Hydrogen chloride, Perc, Toluene, TCA	
Elec, Gas, & Sanitary Svc's			
Electric Services		Acetaldehyde, Arsenic, Benzene, BaP, Beryllium, Cadmium, Chromium, Copper, Formaldehyde, Lead, Manganese, Mercury, Nickel, PAHs, PCBs, TCA	
Gas & Other Svc's		Hydrogen sulfde	
Water Supply		Arsenic, Chromium, Hydrogen chloride, Hydrogen sulfide, Mercury, Perc, TCA, TCE	
Sanitary Services		Benzene, Chloroform, EDC, Methylene chloride, Perc, TCA, TCE, Vinyl chloride	
Refuse Systems		Ammonia, Arsenic, Beryllium, Cadmium, Chlorine, Chromium, Copper, Hydrogen chloride, Lead, Manganese, Mercury, Nickel, PAHs, PCBs, Toluene, Vinyl chloride, Zinc	
Sewerage Systems		Ammonia, Arsenic, Cadmium, Chromium, Copper, Hydrogen chloride, Lead, Mercury, Nickel, Zinc	
Steam Supply		Benzene, Formaldehyde, Toluene	
Electroplating - see Metal Plating, Appendix C-II			
Extermination - see Other Processes, Pesticide Use, Appendix C-I			
Felt Mfg		Asbestos	
Fiberboard Mfg - see Wood Product Mfg, Appendix C-II			
Floor Cover Mfg, Hard Surface		Benzene	
Floor Tile Mfg.		Asbestos	
Food Prod Mfg			
Miscellaneous		Perc, Toluene	S-CMB, S-CT, S-ETO
Bakery Products		Benzene, Formaldehyde, Toluene	
Beverages		Ammonia, Formaldehyde,	
Milk (Condens & Evap)		Ammonia, Benzene, Formaldehyde, Toluene	
Soft Drinks		Arsenic, Toluene	
Canned Foods		Arsenic, Benzene, Formaldehyde, Toluene	
Fats & Oils		EDC, Methylene chloride	
Shorten & Cook Oils		Nickel, Toluene	
Soybean Oil Mills		EDC	
Food Preparation, Misc		Acetaldehyde, Benzene, Benzidene, Carbon Tetrachloride, Chloroform, Dimethyl sulfate, Epichlorohydrin, ETO, Formaldehyde, Maleic Anhydride	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Food Prod Mfg continued			
Grain Mill Products			
Prepared Feeds		Acrolein, Methyl bromide	
Wet Corn Milling		Chlorine, Hydrochloric Acid	
Manufactured Ice		Arsenic	
Meat Packing Plants		Arsenic, Formaldehyde, Hydrochloric Acid	
Sausages & Other Prepared Meats		Acetaldehyde, Ammonia, Arsenic, Chloroform, Formaldehyde, Phenol, Toluene, TCA	
Roasted Coffee		Acetaldehyde, Acrolein, Methylene chloride, TCE	
Seafood, Canned & Cured		Arsenic, Hydrogen sulfide	
Sugar & Confec Prods			
Beet Sugar		Beryllium	
Confectionary Prod		Benzene, Toluene, Formaldehyde	
Canning - see Canned Food Prod, Appendix C-II			
Combustion Processes - see Combustion, Appendix C-I			
Solvents - see Solvent Use, Appendix C-I			
Sterilization - see Other Processes, Appendix C-I			
Food Prod Machinery Mfg		Methylene chloride, Perc, TCA, TCE	
Foundries - see Metal Smelters & Foundries, Appendix C-II			
Forestry Services		Naphthalene	
Also see Wood, Appendix C-II			
Furniture & Fixture Mfg		Methylene chloride, Perc, TCE	S-CMB
Miscellaneous		Methylene chloride, Phthalic anhydride, Toluene, TCE	
Drapery Hardware and Blinds & Shades		Benzene, TCA	
Household Furniture			
Metal		Cresol, Toluene, TCE, Xylenes	
Upholstered		Cadmium, Copper, Lead, Toluene	
Wood		Ammonia, Methylene chloride, Naphthalene, Styrene, Toluene, TCA, TCE, Xylenes	
TV & Radio Cabinets		Toluene	
Office Furniture			
Metal		Ammonia, Formaldehyde, Methylene chloride, Perc, Styrene, Toluene, TCA, TCE, Xylenes, Zinc Oxide	
Wood		Formaldehyde, Methylene chloride, Naphthalene, Toluene, Toluene diisocyanate, TCA, TCE, Xylenes	
Partitions & Fixtures			
Metal		Methylene chloride, Perc, Toluene, TCA, TCE	
Wood		Ammonia, Toluene, Toluene diisocyanate, TCE	
Public Bldg & Related Furn		Ammonia, Toluene, Xylenes	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Furniture & Fixture Mfg, continued			
Combustion Process - see Combustion, Appendix C-I Degreasing - see Solvent Use, Appendix C-I Metal Working - see Metal, Appendix C-II Surface Coating - see Solvent Use and Other Processes, Appendix C-I Upholstery Mfg - see Textiles, Appendix C-II Wood Working - see Wood, Appendix C-II			
Furniture Stores		Ammonia, Methylene chloride, Toluene, TCA	
Furniture Rpr/Reupholstr		Ammonia, Lead, Methylene chloride, Toluene, Xylenes	
Cleaning - see Dry Cleaning, Appendix C-II			
Gas Combustion - see Combustion, Appendix C-I			
Gas Stations		Benzene, EDB, EDC, Gasoline vapors, Toluene, Xylenes	
Liquid Storage & Transfer - see Liquid Storage & Transfer, Appendix C-I Vehicle Refueling - see Other Processes, Appendix C-I			
Glass Products - see Clay, Glass & Stone Products, Appendix C-II			
Grain Production - see Agricultural Prod and Food Prod, Appendix C-II			
Grain Wholesaling		Ammonia	
Grey Iron Foundries - see Metal Smeltors & Foundries, Appendix C-II			
Hospitals			S-CMB, S-ETO
Gen'l Medical & Surgical		ETO, Hydrogen chloride, Hydrogen sulfide, Phenol, Styrene	
Medical Labs		ETO	
Combustion Processes - see Combustion, Appendix C-I Medical Instrument Mfg - see Instrument Mfg, Appendix C-II Research - see Research & Development, Appendix C-II Sterilizers - see Other Processes, Appendix C-I			
Incineration - see Combustion, Appendix C-I			
Industrial Combustion - see Combustion, Appendix C-I			
Industrial Wastewater Treatment - see Other Processes, Appendix C-I			
Inorganic Chemical Mfg - see Chemical Mfg, Inorganic, Appendix C-II			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Instruments & Related Prod's		Freon 113, Toluene, TCA	S-ETO
Engin'ring & Science Instr		Ammonia, Arsenic, Asbestos, Beryllium, Cadmium, Chromium, Copper, Formaldehyde, Hydrogen chloride, Lead, Methylene chloride, Perc, Phenol, Toluene, TCA, TCE, Zinc	
Meas & Controlling Devices		Ammonia, ETO, Mercury, Toluene	
Environmental Contls		Beryllium, Chlorine, Hydrogen chloride, Mercury, TCE	
Process Control Inst		Beryllium, Cadmium, Hydrogen chloride, Toluene, Zinc, Zinc oxide	
Electricity Measuring Instruments		Beryllium, Toluene, TCA	
Medical Instr & Supplies		Ammonia, Hydrogen chloride, Toluene, TCE	
Dental Equip & Supp		Ammonia, Cadmium, Chlorine, ETO, Formaldehyde, Phenol, Toluene, TCA, Zinc, Zinc oxide	
Opthalmic Goods		Ammonia, TCA, TCE	
Photographic Equip & Supplies		Acetaldehyde, Acrylonitrile, Ammonia, Arsenic, Asbestos, Benzene, Benzidine, Benzyl chloride, Bis(chloromethyl) ether, Cadmium, Carbon tetrachloride, Chlorine, Chlorobenzene, Chloroform, Chromium, Dimethyl sulfate, 1,4-Dioxane, Epichlorohydrin, EDC, Formaldehyde, Hydrazine, Hydrogen chloride, Lead, Mercury, Methylene chloride, Naphthalene, Nickel, Perc, Phenol, Phosgene, Propylene oxide, Styrene, Toluene, Toluene diisocyanate, TCA, TCE, Vinyl chloride, Vinylidene chloride, Xylenes, Zinc, Zinc oxide	
Surgical & Med Instr		ETO, Formaldehyde, Perc, Toluene, TCA, TCE, Zinc	
Srg Appliances & Sup		Ammonia, Chromium, ETO, Formaldehyde, Hydrogen chloride, Lead, Nickel, Toluene, TCA, Vinylidene chloride	
Optical Instr & Lenses		Acetaldehyde, Formaldehyde, Methylene chloride, Toluene, TCA, TCE	
Watches/Clocks/Watchcases		Hydrogen chloride, Toluene, TCE	
Plating - see Metal Plating, Appendix C-II			
Also see - Combustion, Other Processes, and Solvent Use Appendix C-I Metal, Plastic, and Rubber, Appendix C-II			
Jewelry, Silverware, & Plated Ware			
Jewelry, Costume		Ammonia, Chlorine, Hydrogen chloride, Lead, Perc, Toluene, TCE	
Jewelry, Precious Metal		Ammonia, Freon 113, Hydrogen chloride, Lead, Toluene, TCA, TCE	
Jewlre Matls & Lapidary Wrk		Ammonia, Hydrogen chloride, Lead	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Jewelry, Silver & Plated Ware continued			
Silverware & Plated Ware		Ammonia, Beryllium, Hydrogen chloride, Lead, TCE	
Degreasing - see Solvent Use, Appendix C-I			
Landfills			
Gas Recovery		Benzene, Methylene chloride, Perc, TCE, Vinyl chloride, Vinylidene chloride	S-CMB
Refuse Landfills		Asbestos	
Combustion Processes - see Combustion, Appendix C-I			
Fugitives - see Liquid Storage & Transfer, Appendix C-I			
Laundry, Cleaning, & Garment Svc's - see Dry Cleaning, Appendix C-II			
Leather & Leather Products			
Leather Tanning & Finishing		Arsenic, Chromium Copper, Formaldehyde, Lead, Naphthalene, Toluene	S-CMB
Footwear, not rubber		Toluene	
Personal Leather Goods		Toluene, TCE	
Tanning Processes	Tanning agents	Chromium, Cresols, Formaldehyde, Phenol Cresols, Formaldehyde, Phenol	
	Dyes, pigments, & coloring agents	Cadmium, Chromium, Copper, Direct Black 38, Lead, Nickel, Zinc compounds	
	Miscellaneous	Ammonia, Chlorine, Chloroform, 1,2-Dichlorobenzene, Glycol ethers, Hydrochloric acid, Methylene chloride, Perc, Sodium hydroxide, Toluene, TCA, TCE, Xylenes	
Combustion Processes - see Combustion, Appendix C-I			
Liquid Storage and Transfer - see Liquid Storage & Transfer, Appendix C-I			
Surface Coating - see Solvent Use and Other Processes, Appendix C-I			
Lumber Prod Mfg - see Wood Product Mfg, Appendix C-II			
Machinery Mfg, Except Electrical		Ammonia, Formaldehyde, Freon 113, Methylene chloride, Nickel, Phenol, Toluene, TCA, TCE	S-CMB
Construction & Related Machinery			
Construct'n Machin		Carbon tetrachloride, Hydrogen chloride, Perc, Toluene	
Conveyors & Conveying Equipment		Ammonia, Toluene, TCE	
Elevators & Moving Stairways		Toluene	
Hoists, Cranes, & Monorails		Ammonia, Cadmium, Copper, Lead, Zinc	
Indstl Trucks/Tractors		Perc, Toluene	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Machinery, Construction Related continued			
Oil Field Machinery			
Engines & Turbines			
Internal Combust'n Engines		Chromium, Lead, Nickel, TCA, Xylenes	
Farm Machinery & Equip			
Turbines & Turbine Generator Sets		Ammonia, Benzene, EDB, EDC, Gasoline vapors, Hydrazine, TCA Toluene	
General Industrial Machinery		Ammonia, Formaldehyde, Hydrogen chloride, Maleic anyhydride, Perc, Phenol, Styrene, Toluene, Toluene diisocyanate, TCA, Xylenes	
Ball & Roller Bearings		Ammonia, Chromium, Copper, Cresol, Epichlorohydrin, Formaldehyde, Hydrogen chloride, Lead, Nickel, Phenol, Toluene, TCA, TCE, Zinc oxide	
Blowers & Fans		Copper, Naphthalene, Toluene, TCA	
Compress, Air & Gas		Copper, Gasoline vapors, Lead, Toluene, TCA, TCE	
Industrial Furnaces & Ovens		Toluene	
Industrial Patterns		Arsenic, Copper, Hydrogen chloride, Lead, Toluene, TCE, Zinc	
Power Transmission Equipment		Formaldehyde, Phenol	
Pumps & Pumping Equipment		Ammonia, Copper, Hydrogen chloride	
Speed Changers, Drives & Gears		Ammonia, Formaldehyde, Hydrogen chloride, Lead, Perc, Phenol, Toluene, TCA, Xylenes	
Metalworking Machinery		Perc, Toluene, TCA	
Machine Tool Accessories		Arsenic, Perc	
Machine Tools, Metal Cutting Types		Ammonia, Beryllium, Chromium, Hydrogen chloride, Toluene, TCA, TCE	
Machine Tools, Metal Forming Types		Ammonia, Lead, Toluene, TCE	
Rolling Mill Machinery		Ammonia, Benzene, Lead, Perc, Toluene, TCA, TCE	
Special Dyes, Tools, Jigs, & Fixtures		Cadmium, Chromium, Zinc, Zinc oxide	
Office & Computing Machines		1,4-Dichlorobenzene, Formaldehyde, Hydrogen chloride, Methylene chloride, Naphthalene, Toluene, TCE, TCA, Zinc	
Miscellaneous		CFC-113, Hydrogen chloride, Toluene, TCA	
Calculating & Accounting Machines		Arsenic, Hydrogen chloride, TCA	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Machinery, Office & Computing, continued			
Electronic & Computing Equipment		Ammonia, Arsenic, Asbestos, Benzene, Benzidine, BaP, Bis(chloromethyl)ether, Chlorine, Chloroform, Chromium, Copper, Freon 113, Hydrogen chloride, Hydrogen sulfide, Lead, Methylene chloride, Naphthalene, Nickel, Nitrobenzene, Perc, Phenol, Toluene, TCA, TCE, Vinyl chloride, Zinc	
Also see - Electric & Electronic, Appendix C-II			
Typewriters		Ammonia, Benzene, Beryllium, Cadmium, Formaldehyde, Hydrogen chloride, Lead, Nickel, Toluene, Xylenes	
Refrigrat'n & Svc Machin			
Automatic Merchandising Machines		Toluene	
Commercial Laundry Equipment		Arsenic, Perc, Toluene	
Measur & Dispens Pumps		Toluene	
Refrig & Htg Equip		Ammonia, Copper, Formaldehyde, Freon 113, Hydrogen sulfide, Lead, Methylene chloride, Phthalic anhydride, Toluene, TCA, TCE, Xylenes, Zinc	
Misc Svc Indus Mach		Toluene	
Special Industry Machinery		Ammonia, Arsenic, Benzene, Chromium, Copper, Lead, Methylene chloride, Perc, Toluene, TCA, TCE	
Food Prods Machinery		Arsenic	
Paper Indus Machin		Ammonia, Perc, Toluene, TCE	
Printing Trades Mach		Ammonia, Chromium, Lead, Methylene chloride, Toluene, Toluene diisocyanate, TCA, Zinc oxide	
Textile Machinery		Toluene, TCE, Xylenes	
Woodworking Machin		Chlorine, Hydrogen chloride, Toluene	
Combustion Processes - see Combustion, Appendix C-I			
Metal Forming - see Machining Mfg and Metal Forming, Appendix C-II			
Surface Coating/Degreasing - see Solvent Use and Other Processes, Appendix C-I			
Machining - see Metal Forming, Metal Prod Fabrication, and Metal Smelting, Appendix C-II			
Magazine (Periodical) Publishing - see Printing & Publishing, Appendix C-II			
Mechanical Assembly Cleaning - see Solvent Use, Degreasing, Appendix C-I			
Metal Forming			
Aluminum Forming		Chloroform, Methylene chloride, TCE	S-CMB
Machining		TCA	
Also see - Metal Product Fab and Metal Smeltere, Appendix C-II			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Metal Furniture Mfg - see Furniture Mfg, Appendix C-II			
Metal Plating	Particulate metals Including but not limited to: From electrocleaning, and plating	Cadmium, Chromium (VI), Nickel, TCA	S-CMB S-MP
	Gaseous and aerosol releases Including but not limited to:		
Electrocleaning	Alkaline cleaning agents	Sodium hydroxide	
Cleaning/Pickling	Acid cleaning, pickling agents	Chromic acid, Hydrochloric acid	
Cleaning/Plating	Chelating agents, solvents	Nitrilotriacetic acid, Thiourea	
Storage/Handling	Plating/other process bath compon. Plating tank, Electric arc furnace	Ammonia, Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Sodium hydroxide, Zinc	
Combustion Processes - see Combustion, Appendix C-I Degreasing Processes - see Solvent Use, Appendix C-I Storage and Handling - see Liquid Storage & Transfer, Appendix C-I			
Metal Product Fabrication		Acrylonitrile, Ammonia, 1,3-Butadiene, Cadmium, Chlorine, Copper, Formaldehyde, Freon 113, Hydrazine, Hydrogen chloride, Lead, Mercury, Methylene chloride, Perc, Styrene, Toluene, TCA, TCE, Zinc	S-CMB, S-ETO, S-UP
Metal Cans & Shipping Containers			
Metal Cans		Benzene, Lead, Perc, Toluene, TCA, TCE, Xylenes	
Metal Barrels, Drums & Pails		Ammonia, Naphthalene, Toluene, TCA	
Metal Cutlery, Handtools & Hardware			
Cutlery		Chromium, Lead, Toluene, TCE	
Hand & Edge Tools		Ammonia, Chlorine, Chromium, Hydrogen chloride, Methylene chloride, Styrene, Toluene, TCA, TCE, Zinc	
Hand Saws & Saw Blades		Copper, Lead, Nickel, Toluene, TCE, Zinc	
Misc Hardware		Ammonia, Chlorine, Chromium, Copper, Hydrogen chloride, Hydrogen sulfide, Lead, Methylene chloride, Naphthalene, Perc, Phenol, Toluene, TCA, TCE, Zinc, Zinc oxide	
Metal Foil & Leaf		Ammonia, Copper, Hydrogen chloride, Lead, Perc, Zinc, Zinc oxide	
Metal Forgings & Stampings			
Iron & Steel Forgings		Hydrogen sulfide	
Auto Stampings		Ammonia, Perc, Toluene	
Crowns & Closures		Lead	
Misc Metal Stampings		Copper, Perc, Toluene, TCA, TCE	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Metal Prod Fabric continued			
Misc Metal Services			
Plating & Polishing		Toluene	
		Acrolein, Ammonia, Arsenic, Benzene, Cadmium, Chloride, Chlorine, Chloroform, Chromium, Copper, Formaldehyde, Hydrogen chloride, Lead, Methylene chloride, Nickel, Nitrobenzene, Perc, Toluene, TCA, TCE, Zinc, Zinc oxide	
Metal Coating & Allied Services		Acetaldehyde, Arsenic, Benzene, Cadmium, Chlorine, Chromium, Copper, Formaldehyde, Hydrogen chloride, Lead, Methylene chloride, Nickel, Perc, Toluene, TCA, TCE, Xylenes, Zinc, Zinc oxide	
Ordnance & Accessories			
Small Arms Ammunit'n		Lead	
Ammun, exc sml arms		Hydrogen sulfide, Toluene, TCE	
Small Arms		Ammonia, Arsenic, Formaldehyde, Freon 113, Hydrogen chloride, Lead, Phenol, Toluene, Zinc oxide	
Plumbing & Heating, except electric			
Metal Sanitary Ware		Methylene chloride, Toluene	
Plumbing Fittings & Brass Goods		Ammonia, Cadmium, Formaldehyde, Hydrogen chloride, Phenol, Toluene, TCE, Zinc oxide	
Heating Equipment, except electric		Ammonia, Benzene, Chromium, Formaldehyde, Perc, Phenol, Toluene	
Screw Machine Products, Bolts, etc.			
Screw Machine Prod		TCA, TCE	
Bolts, Nuts, Rivets, & Washers		Cadmium, Hydrogen chloride, Methylene chloride, TCA, TCE, Zinc Hydrogen chloride, Toluene, TCA	
Steel Springs, exc wire		Toluene	
Structural Metal Product Fabrication			
Structural Metal Fabrication		Copper, Toluene, Xylenes, Zinc oxide	
Metal Doors, Sash, & Trim		Ammonia, Cadmium, Formaldehyde, Perc, Toluene, TCA, Xylenes, Zinc	
Fabricated Plate Work, boiler shops		Copper, Gasoline vapors, Hydrogen chloride, Lead, Perc, Styrene, Toluene, TCA, TCE Ammonia, Perc, Toluene, Toluene diisocyanate, TCA, TCE	
Sheet Metal Work		Ammonia, Copper, Perc, Toluene, TCA, TCE	
Architectural Metal Work			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Metal Prod Fabric, Structural Metal, continued			
Prefabric Metal Bldgs		Toluene, Xylenes	
Misc Metal Work		Ammonia, Benzene, Toluene	
Valves & Pipefittings		Copper, Phenol, Toluene, TCA, TCE, Zinc	
Wire Product Fabricat'n		Ammonia, Hydrogen chloride, Nickel, Perc, Toluene, TCA, Vinyl chloride	
Combustion Processes - see Combustion, Appendix C-I			
Degreasing - see Solvent Use, Appendix C-I			
Forming - see Metal Forming and Metal Smelters, Appendix C-II			
Surface Coating - see Solvent Use, Appendix C-I			
Metal Smelters & Foundries - (for non-metals mining see Mining, Appendix C-II)			S-CMB
For any type of metal smelter - see Combustion and Liquid Storage & Transfer, Appendix C-I			
For any type of metal smelter		Hydrogen sulfide, All listed metals	
Primary Aluminum Pro	Gaseous, aerosol, partic releases including but not limited to:	Benzene, Chloroform, Cresols, [Fluorides], Methylene chloride, PAHs, TCE	
Furnace Tapping	From the calciner, furnace, mat'l		
Coke Quenching	crusher/mill, storage & handling,		
Furnace Charging	service road, prebake/reduction/		
Metal Forming	soderberg stud cell		
	Anode bake furnace	Benzene, Cresols, PAHs	
Secondary Aluminum	Gaseous, aerosol, partic releases		
Furnace Tapping	including but not limited to:	Nickel	
Furnace Charging	From the furnace, and the service		
Metal Casting	road		
Metal Forming		Chloroform, Methylene chloride, TCE	
Beryllium Alloys	Gaseous, aerosol, partic releases		
Molding	including but not limited to:	Beryllium	
Primary Cadmium Pro	Gaseous, aerosol partic releases		
Material Prep	including but not limited to:	Cadmium	
Metal Casting	From the furnace, condenser,		
Mining Operations	material storage and handling		
Cadmium-Nickel Battery	Gaseous, aerosol, partic releases		
Material Prep	including but not limited to:	Cadmium, Lead, Nickel	
	From the sintering machine, and material storage and handling		
Chromite Ore Refining	Gaseous, aerosol, partic releases		
	including but not limited to:	Chromium	
	From dryer, mill, cyclone, storage		
Metallurgical Coke	Gaseous, aerosol partic releases		
Coke Oven Charging/ Pushing	including but not limited to:	Acetaldehyde, Benzene, Cresols, Formaldehyde, Phenol, Toluene, Xylenes	
Material Prep	From the coke oven, vessels, matr'l	Ammonia, Arsenic, Beryllium, Cadmium, Hydrogen sulfide, Lead, Manganese, Mercury, Nickel, PAH,	
Coke Quenching	storage and handling, and outdoor storage pile		
Coke Production		PAHs, Toluene	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Metal Smelters & Foundries continued			
Primary Copper Smelt	Gaseous, aerosol, partic releases		
Converter Charging	including but not limited to:	Arsenic, Cadmium, Copper, Lead, Mercury,	
Furnace Tapping	From the converter, furnace, roaster	PAH, Selenium, Zinc	
Furnace Charging	vessel, material storage and		
Material Prep	handling, outdoor storage pile,		
Metal Casting	service road		
Slag Dumping			
Mining Operations		Arsenic, Mercury, Cadmium, Copper	
Copper Forming		Perchloroethylene	
Secondary Copper Oper	Gaseous, aerosol, partic releases		
(Brass and Bronze Pro)	including but not limited to:	Cadmium, Copper, Lead, Manganese,	
Furnace Tapping	From the furnace, and service road	Mercury, PAHs, Selenium, Zinc	
Furnace Charging			
Metal Casting			
Electrometallurgical Products		Arsenic, Cadmium, Chromium, Copper, Manganese, Nickel	
Ferroalloy Production	Gaseous, aerosol, partic releases		
Furnace Tapping	including but not limited to:	Cadmium, Chromium, Copper, Lead,	
Furnace Charging	From material storage & handling,	Manganese, Nickel, PAHs, Zinc	
Material Prep	storage pile, furnace, deoxerbur-		
Metal Casting	izing vessels		
Mining, except V		Nickel	
Slag Dumping			
Iron & Steel Foundries			
Iron and Steel Pro	Gaseous, aerosol, partic releases		
Coke Oven Charging/ Pushing	including but not limited to:	Ammonia, Arsenic, Benzene, Beryllium, Cad-	
Furnace Tapping	From the coke oven, cupola, furnace,	mium, Chlorine, Chromium, Coke oven emis,	
Furnace Charging	sintering machine, storage	Copper, Formaldehyde, Hydrogen chloride,	
Material Preperation	& handling, storage pile,	Hydrogen sulfide, Lead, Manganese, Mer-	
Coke Quenching	service road	cury, Naphthalene, Nickel, PAHs, Phenol,	
Slag Dumping		Toluene, TCE, Xylenes, Zinc	
Mining Operations			
Drying			
Crushing			
Sizing			
Weighing			
Feeding Furnace			
Also see Combustion	(Blast Furnace), Appendix C-I		
Gray Iron Foundries	Gaseous, aerosol, partic releases		
Furnace Tapping	including but not limited to:	Acetaldehyde, Acrolein, Ammonia, Arsenic,	
Furnace Charging	From the furnace, foundary mold &	Benzene, Beryllium, Cadmium, Chromium,	
Converter Charging	core decomposition, & service road	Copper, Formaldehyde, Hydrogen sulfide,	
Metal Casting		Iron, Lead, Manganese, Mercury,	
Cupola		Naphthalene, Nickel, Phenol, PAHs,	
		Styrene, Toluene, TCA, Xylenes, Zinc	
Malleable Iron Foundries		Ammonia, Formaldehyde, Zinc	
Steel Investment Fndrs		Cadmium, Chromium	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Metal Smelters & Foundries continued			
Steel Foundries		Ammonia, Arsenic, Cadmium, Chromium, Copper, Hydrogen chloride, Lead, Naphthalene, Nickel, Perc, Phenol, Styrene, Toluene, TCA, Xylenes, Zinc	
Primary Lead Smelting Furnace Tapping Furnace Charging Material Prep Metal Casting Slag Dumping Mining Operations	Gaseous, aerosol, partic releases including but not limited to: From the furnace, sintering machine, material storage and handling, outdoor storage pile, and service road	Arsenic, Cadmium, Copper, Lead, PAHs, Mercury, Selenium	
Secondary Lead Smelt Furnace Tapping Furnace Charging Metal Casting	Gaseous, aerosol, partic releases including but not limited to: From the furnace, service road, and outdoor storage pile	Arsenic, Lead, Manganese, PAHs, Selenium	
Lead Acid Battery Pro Material Prep Metal Casting Screening Storage & Handling	Gaseous, aerosol, partic releases including but not limited to:	Arsenic, Cadmium, Lead, Manganese Mercury	
Miscellaneous Lead Pro Converter Charging Material Preparation Metal Casting	Gaseous, aerosol, partic releases including but not limited to:	Arsenic, Cadmium, Lead	
Manganese Production Furnace Charging Furnace Tapping Material Crusher/ Mill Metal Casting Slagging Synthetic Mang Pro Roasting Drying Grinding Packaging/Handling Melting Refining Hot Metal Transfr	Gaseous, aerosol, partic releases including but not limited to: From the furnace, mat'l storage & handling, storage pile, slips, casthouse, sinter discharge, windbox & discharge	Manganese, PAHs	
Dry Battery Production Material Prep Screening Storage & Handling Also see Electrical & Electronic Equipment, Appendix C-II	Particulate substance releases including but not limited to: From the material crusher/mill and material storage	Manganese, Mercury	
Mercury Production Mining Prim. Ore Process Secondary Prod	Particulate releases including but not limited to: From smelter, hoeing, retort	Mercury	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Metal Smelters & Foundries continued			
Nickel Production Metal Casting Mining Operations Refining Melting/Roasting Crushing Drying	Gaseous, aerosol, partic releases including but not limited to: From the calciner, furnace, material crusher/mill, roaster, material storage & handling, rotary dryers, storage pile, day bin, skip hoists	Arsenic, Cadmium, Lead, Nickel, PAHs, Selenium, Zinc	
Nonferrous Metal Prod Super Alloys Permanent Magnet Alloys Electrical Alloys	Gaseous, aerosol, partic releases including but not limited to:	Nickel	
Secondary Processing of Nickel Scrap	Gaseous, aerosol, partic releases including but not limited to:	Nickel	
Radium, Uranium, & Vanadium Mining	Gaseous, aerosol, partic releases including but not limited to:	Ammonia, Gasoline vapors, Hydrogen Sulfide, Radionuclides	
Steel Foundries Converter Charging Furnace Tapping Furnace Charging Metal Casting Basic Oxygen Proc	Gaseous, aerosol, partic releases including but not limited to: From furnace, foundry mold & core decomposition, and service road From argon oxygen decarburization vessels, coke ovens	Arsenic, Beryllium, Cadmium, Chromium, Manganese, Nickel, Zinc	
Cold Finish Steel Shapes		Methylene chloride, Toluene	
Steel Pipe & Tubes		Ammonia, Pero	
Steel Wire & Related Products Also see Metal Smelters, Iron & Steel, Appendix C-II		Ammonia, Chlorine, Hydrogen chloride, Lead, PCB, Toluene, Zinc	
Uranium Prod - see Metal Smelters, Radium, Appendix C-II			
Vanadium Prod - see Metal Smelters, Radium, Appendix C-II			
Primary Zinc Smelting Material Prep Slag Dumping Mining Operations	Gaseous, aerosol, partic releases including but not limited to: From the condenser, furnace, reactr, retort, material storage and handling, outdoor storage pile, and service road	Arsenic, Cadmium, Copper, Mercury, PAHs, Selenium, Zinc	
Secondary Zinc Proces Furnace Tapping Furnace Charging Metal Casting	Gaseous, aerosol, partic releases including but not limited to: From the furnace, condenser, retort service road, and galvanizing vessel	Cadmium, Mercury, Nickel, Selenium, Zinc	
Military Bases			
Chemical Prod - see Chemical Mfg, Military Chem Mfg, Appendix C-II			
Combustion Process - see Combustion, Appendix C-I			
Degreasing - see Solvent Use, Appendix C-I			
Research - see Research & Development, Appendix C-II			
Surface Coating - see Solvent Use and Other Processes, Appendix C-I			
Vehicle Refueling - see Other Processes, Appendix C-I			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Millworks - see Wood Product Mfg, Appendix C-II			
Mining of Non-Metals (for Metals Mining see Metal Smelters, Appendix C-II)			S-CMB
Arsenic Mining		Arsenic	
Anthracite Mining		Arsenic, PAHs, Toluene diisocyanate	
Asbestos		Asbestos, Silica	
Clay		Arsenic, Beryllium, Lead, Toluene diisocyanate	
Coal (Bituminous) & Lignite		Arsenic, Hydrogen sulfide, Toluene diisocyanate	
Limestone		Nickel	
Minerals, Nonmetallic		Arsenic, Asbestos, Beryllium, Cadmium, Chromium, Lead, Toluene diisocyanate	
Phosphate Rock		Radionuclides	
Sand & Gravel			
Construction		Vinyl Chloride	
Industrial		Arsenic, Beryllium, Lead, Phenol, Toluene diisocyanate	
Sulfur		Arsenic, Hydrogen sulfide	
Monofilament Fiber Mfg	Gaseous and particulate releases		
Wet Spin	including but not limited to:	Polymer constituentes - Acrylonitrile,	S-CMB
Dry Spin	From: polymer and solvent storage	Propylene, Vinyl chloride	
Filter-tow Dry Spin	dope preparation (blending),		
Filament Yarn Dry Spin	filtration, spin cell, lubrication, drawing, finish application, and drying	Solvents/precipitants - Sodium hydroxide, Toluene, Zinc chloride	
		Flame retardants - Vinyl bromide	
		Promoters/activators - Hydrazine	
		Lubricants - Ammonium salts	
Combustion Processes - see Combustion, Appendix C-I			
Storage - see Liquid Storage & Transfer, Appendix C-I			
Surface Coating - see Solvent Use and Other Processes, Appendix C-I			
Motor Vehicle Production - see Transportation Equipment, Appendix C-II			
Motorcycle Mfg - see Tranportation Equipment, Appendix C-II			
Musical Inerument Mfg		Lead, Toluene, TCE	
Also see - Combustion, Other Processes, and Solvent Use, Appendix C-I Wood Product Mfg, Appendix C-II			
National Defense		Carbon tetrachloride, CFC 113, Chromium, Dioxin, Hydrazine, Mercury, Methylene chloride, Perc, Phenol, PCBs, TCA, Xylenes	S-CMB, S-CT, S-UP
Also see Military Bases, Appendix C-II			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
National Security		Ammonia, Benzene, Beryllium, Cadmium, Chlorinated phenols, Chromium, ETO, Formaldehyde, Gasoline vapors, Hydrogen chloride, Hydrogen sulfide, Lead, Manganese, Methylene chloride, Nickel, Perc, Phenol, PAHs, Radionuclides, TCA, TCE, Xylenes	
Natural Gas Combustion - see Combustion, Appendix C-I			
Needle, Pin, & Fastener Mfg		Formaldehyde, Hydrogen chloride, Lead, Toluene, TCE, Zinc	
Also see Metal Prod Fabrication, Appendix C-II			
Newspaper Publishing - see Printing & Publishing, Appendix C-II			
Nickel Plating - see Metal Plating, Appendix C-II			
Office Machine Mfg - see Machinery Mfg, Appendix C-II			
Office Supplies Mfg			
Carbon Paper & Inked Ribbons		Toluene	
Lead Pencils & Art Goods		Copper, Formaldehyde, Toluene	
Marking Devices		Lead, Toluene, TCE, Zinc	
Pens & Mech Pencils		Chlorine, Methylene chloride, Perc, Toluene, TCE	
Ink/Dye Mfg - see Chemical Mfg, Appendix C-II			
Oil Combustion - see Combustion, Appendix C-I			
Oil and Gas Extraction		Benzene, Ketones, Phenols, PAHs, Sulfur compounds, Toluene, Xylenes	S-CMB, S-CT
Drilling Wells		Hydrogen sulfide	
Exploration		Benzene, Carbon tetrachloride, Chlorobenzene, 1,4-Dichlorobenzene, EDC, Hydrogen sulfide, Toluene, TCA, Xylenes	
Extraction			
Natural Gas & Crude Petroleum		Ammonia, Formaldehyde, Gasoline vapors, Hydrogen sulfide	
Nat'l Gas Liquids		Ammonia, Hydrogen sulfide	
Field Services		Hydrogen sulfide, Gasoline vapors	
Gas Stripping	Gaseous and aerosol releases from field separator	EDC	
Fugitive Losses			
Oil Production	Gaseous and aerosol releases from: sumps, wells, well heads, well cellars, pumps, fittings, oil pits, compressors, oil/water separators,		
Fugitive Losses			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Oil Production continued			
Tertiary Oil Production	Gaseous and aerosol releases from: steam drive wells, cyclic wells, pseudo cyclic wells		
Heavy Oil Test Stations	Gaseous and aerosol releases From test stations		
Combustion Processes - see Combustion, Appendix C-I			
Oil Storage - see Liquid Storage and Transfer, Appendix C-I			
Other Processes - see Other Processes & Fugitives, Appendix C-I			
Solvent Use - see Solvent Use, Appendix C-I			
Storage & Handling - see Liquid Storage & Transfer, Appendix C-I			
Organic Chemical Mfg - see Chemical Mfg, Appendix C-II			
Paint & Allied Products Mfg - see Chemical Mfg, Appendix C-II			
Paper & Paper Prod. Mfg/Treating - see Wood, Appendix C-II			
Pens & Pencils - see Office Supplies, Appendix C-II			
Petroleum Bulk Stations & Terminals		Benzene, Benzyl chloride, Carbon Tetrachloride, Chlorine, EDB, EDC, Formaldehyde, Gasoline vapors, Hydrogen chloride, Hydrogen sulfide, Methyl methacrylate, Styrene, Toluene, Xylenes	
Also see - Bulk Plants & Terminals, Appendix C-II			
Petroleum & Coal Products			
Miscellaneous		Chromium, Gasoline vapors, Naphthalene	S-CMB, S-CT
Asphalt Felts & Ctgs		Asbestos, Carbon tetrachloride, Chromium, Formaldehyde, PAHs	
Lubricating Oils & Greases		Asbestos, Benzene, Epichlorohydrin, Formaldehyde, Hydrogen sulfide, Toluene, TCA, TCE, Xylenes	
Paving & Roofing Mat'ls Pav'g Mixt'rs & Blocks		Ammonia, Asbestos, Benzene, BaP & other PAHs, Chloroform, Chromium, Formaldehyde, Mercury, Methyl isocyanate, Toluene, TCA	
Petroleum Refineries			
(1)Most Refinery Operations	Gaseous, aerosol, partic releases including but not limited to: From: boiler, cat cracker, flare, incinerator, process heater	Acetaldehyde, Ammonia, Arsenic, Benzene, BaP & other PAHs, Beryllium, Cadmium, Chlorine, Chromium, Coke Fines, Cresol, Dimethyl sulfate, EDB, EDC, Formaldehyde, Gasoline vapors, Hydrogen chloride, Hydrogen sulfide, Lead, Maleic anhydride, Mercury, Naphthalene, Nickel, Phenol, Toluene, Xylenes, Zinc, Zinc oxide	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Petroleum & Coal continued			
(2)Crude Separation Gas Production	In addition to item (1) absorber, distillation/fractionation	In addition to Item (1)-Ammonia, Chlorides, Cresols, EDC, Maleic anhydride, Michler's Ketone, Phenols, PAHs, Sulfur Cmpds, Zinc	
(3)Light Hydrocarbon Processing	In addition to Item (1): catalyst regeneration	In addition to Item (1)-Nickel Carbonyl	
(4)Middle and Heavy Distillate Process	In addition to Items (1) and (2): evaporation, stripper	In addition to Item (1)-Acetaldehyde, Ammonia, Aromatic Amines, Copper, Cresols, Formaldehyde, Maleic anhydride, Michler's Ketone, Nickel, Phenols, PAHs, Sulfur Compounds, Xylenes, Zinc	
(5)Residual Hydrocarbon Processing	In addition to Items (1) and (2): visbreaker furnace, process vent, stripper	In addition to Item (1)-Acetaldehyde, Ammonia, Aromatic Amines, Chromates, Cresol, Formaldehyde, Lead, Maleic anhydride, Michler's Ketone, Lead, Nickel, Nickel carbonyl, Phenols, PAHs, Sulfur Cmpds, Zinc	
Also see Combustion, Liquid Storage & Transfer, and Other Processes, Appendix C-I Chemical Mfg, and Oil & Gas Extraction, Appendix C-II			
Pharmaceutical Industries - see Chemical Mfg, Drugs, Appendix C-II			
Photocopying & Blueprinting		Ammonia	
Photographic Chemicals Mfg - see Chemical Mfg, Appendix C-II			
Photographic Studios		Ammonia	
Photofinishing Labs		Methylene chloride, TCA	
Pipelines - see Other Processes and Liquid Storage & Transfer, Appendix C-I			
Plastic & Synthetics Mfg - see Chemical Manufacturing, Appendix C-II			
Plastic Products Mfg Plastics Forming		TCA	S-OMB
Printing & Publishing Miscellaneous		Toluene	S-OMB
Blankbooks & Bookbind'g Blankbooks & Loose-leaf Binders		Ammonia, Toluene, TCA, TCE	
Bookbinding etc		Toluene	
Books Printing		Lead, TCA	
Publishing		Arsenic, Lead	
Newspapers		TCE	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Printing & Publishing continued			
Printing (Commercial)		Toluene, TCA	
Engraving & Plate		Benzene	
Gravure		Ammonia, Benzene, Cadmium, Formaldehyde, Gasoline vapors, Methylene chloride, Nickel, Perc, Toluene, TCA, TCE, Xylenes	
Letterpress		Ammonia, Benzene, Chromium, Methylene chloride, Naphthalene, Perc, Toluene, TCE	
Lithographic		Ammonia, Benzene, Toluene, TCE	
Printing Trade Svce			
Typesetting		Ammonia	
Electrotyping & Stereotyping		Lead	
Publishing (Misc)		Toluene	
Combustion Processes - see Combustion, Appendix C-I			
Ink Mfg - see Chemical Mfg, Appendix C-II			
Printing - see Solvent Use, Appendix C-I			
Surface Coating - see Solvent Use, Appendix C-I			
Process Gas Combustion - see Combustion, Appendix C-I			
Publicly Owned Treatment Works (POTWs)	Miscellaneous	Acrylonitrile, Benzene, Carbon tetrachloride, CFC-113, Chlorine, Chlorobenzene, Chloroform, EDC, Fluorocarbons, Hydrogen sulfide, Methylene chloride, Perc, Toluene, TCA, TCE, Vinyl chloride, Vinylidene chloride, Xylenes	S-CMB
	Gaseous products including but not limited to:		
	From raw sewage offgases	Carbon tetrachloride, Chlorobenzene, p-Dichlorobenzene, EDC	
Combustion	From exhaust gases of digester gas burning engines modified to lower NOx emissions	Acrolein, 1,3-Butadiene	
Sludge Composting		Ammonia, Dimethylamine	
	From sawdust used as bulking agent (sawdust from lumber obtained at structural demolition projects)	Asbestos	
Sludge Dewatering (using an aminomethylated polyacrylamide having a dimethylamine group in the polymer)		Dimethylamine	
Sludge Treatment		Chloroform	
Aeration Tanks - see Liquid Storage & Transfer, Appendix C-I			
Chlorinator Discharge			
Digesters			
Headworks			
Sludge Incinerators - see Combustion, Appendix C-I			
Water Treatment - see Other Processes, Appendix C-I			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Pulp Mills - see Wood Product Mfg, Appendix C-II			
Quarries	Particulate-phase substances including but not limited to:	Asbestos, Arsenic, Silica	
Railroad Equip Mfg - see Transportation Equip, Appendix C-II			
Refractory Production		Chromium	
Research & Devel. Labs		Ammonia, Cadmium, Chloride, Chromium, Copper, Formaldehyde, Hydrogen chloride, Hydrogen sulfide, Lead, Manganese, Mercury, Methylene chloride, Nickel, Perc, Phosgene, Phthalic anhydride, Styrene, Toluene, TCA, TCE, Zinc, Zinc oxide	S-CMB, S-UP
Commercial Testing Labs		Epichlorohydrin, Hydrogen sulfide	
Chemical Mfg - see Chemical Mfg, Appendix C-II Combustion Processes - see Combustion, Appendix C-I Other Processes - see Other Processes, Appendix C-I Solvents - see Solvent Use, Appendix C-I Storage and Handling - see Liquid Storage & Transfer, Appendix C-I			
Roadway Surfacing		Asbestos, Benzene	
Rubber Mfg - see Chemical Mfg, Appendix C-II			
Rubber & Misc Plastics Prod			
Fabricated Rubber Prod		Ammonia, Benzene, Chlorine, ETO, Formaldehyde, Hydrogen chloride, Lead, Methylene chloride, Naphthalene, Perc, Styrene, Toluene, Toluene diisocyanate, TCA, Vinyl chloride, Zinc, Zinc oxide	S-CMB
Plastics Prod, Misc		Acetaldehyde, Acrylonitrile, Ammonia, Benzene, Benzyl chloride, Beryllium, Chlorine, EDC, ETO, Formaldehyde, Freon 113, Gasoline vapors, Hydrogen chloride, Hydrogen sulfide, Lead, Mercury, Methyl methacrylate, Methylene chloride, Naphthalene, Phenol, Phthalic anhydride, Styrene, Toluene, Toluene diisocyanate, TCA, TCE, Vinyl chloride, Zinc oxide	
Reclaimed Rubber		Benzene, Cadmium, Lead, Naphthalene, Toluene	
Rubber & Plastic Footwear		Naphthalene, Toluene, TCA	
Rubber & Plastic Hose/Belting		Perc, Toluene	
Tires & Inner Tubes		Ammonia, Benzene, Methylene chloride, Styrene, Toluene, TCA, Zinc oxide	
Rubber Mfg - see Chemical Mfg, Appendix C-II Surface Coating - see Solvent Use, Appendix C-I			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Rubber Cement Application/Manufacture Application - see Solvent Use, Appendix C-I Manufacture - see Solvent Use, Appendix C-I and Chemical Mfg, Appendix C-II			
Saw Mills - see Wood Product Mfg, Appendix C-II			
Semiconductor Mfg - see Electronic Equipment Mfg, Integraged Circuits, Appendix C-II			
Sewage Plants - see Combustion (Incineration), Appendix C-I			
Shingle & Siding Mfg Also see Plastics, Appendix C-II		Asbestos	S-CMB
Sign & Advert. Display Mfg		Ammonia, Beryllium, Hydrogen chloride, Naphthalene, Perc, Toluene, TCA, TCE, Zinc	
Smeltere - see Metal Smeltere, Appendix C-II			
Solvent Recycling Also see - Solvent Use, Appendix C-I		Benzene, Chlorinated organics	
Space Research & Technology Combustion Processes - see Combustion, Appendix C-I Degreasing - see Solvent Use, Appendix C-I Research - see Research & Development, Appendix C-II Surface Coating - see Solvent Use and Other Processes, Appendix C-I Vehicle Refueling - see Other Processes, Appendix C-I			S-CMB, S-UP
Sporting & Athletic Goods Mfg Also see Combustion, Solvent Use, and Surface Coating, Appendix C-I Chemical Mfg, Metal Product Mfg, Rubber Product Mfg, and Textiles Mfg, Appendix C-II		Methylene chloride, TCA	S-CMB
Stone Products Mfg - see Clay, Glass & Stone Products, Appendix C-II			
Surface Coating Application/Manufacture Application - see Solvent Use and Surface Coating, Appendix C-I Manufacture - see Chemical Mfg, Appendix C-II			
Surgical & Med Supp Mfg Combustion Processes - see Combustion, Appendix C-I Degreasing - see Solvent Use, Appendix C-I Instruments - see Instrument Mfg, Appendix C-II Other Processes - see Other Processes, Appendix C-I Pharmaceuticals Mfg - see Chemical Mfg, Appendix C-II Sterilization - see Sterilizers, Appendix C-I Surface Coating - see Solvent Use, Appendix C-1			
TSDFs - see Transfer, Storage, & Disposal Facilities, Appendix C-II			

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Textile Mill Product'n Mfg.			
Miscellaneous		Asbestos, Benzene, Benzidine, Bis(chloromethyl) ether, 1,4-Dichlorobenzene, Dichloroethane, Dioxane, Ethyleneimine, Formaldehyde, Hydrazine, Methyl Bromide, Perc, Phenol, TCE	S-CMB
Apparel/Other Text'l Prod		Ammonia, Arsenic, Chlorine, EDC, Toluene, TCA	
Fur Goods		Ammonia, Perc	
Apparel Belts		Ammonia, Cadmium, Copper, Toluene, Zinc Toluene	
House Furnishings		Napthalene, Toluene	
Auto/Apparel Trimings		Ammonia, Arsenic, Benzene, Toluene, Vinyl chloride	
Floor Covering Mills			
Miscellaneous		Arsenic	
Woven Carpets & Rugs		Arsenic	
Tufted Carpets & Rugs		Benzene, Formaldehyde	
Knitting Mills		Benzene, Benzidine	
Hosiery		Acrylonitrile, Benzene	
Knit Outerwear Mills		Ammonia, Arsenic, Benzene, Perc	
Narrow Fabric Mills		Benzene, 1,4-Dioxane, Mineral fibers	
Nonwoven Industry		Bis(chloromethyl) ether	S-CMB
Textile Finishing			
Miscellaneous		Acrylonitrile, Benzene, Benzidene, 1,3-Butadiene, Formaldehyde, Hydrazine, Perc, Toluene, Vinyl chloride, Vinylidene chloride, Xylenes	
Finish Plants			
Cotton		Acrylonitrile, Benzene, Chromium, 1,4-Dichlorobenzene, Toluene	
Synthetic		Benzene, Copper, 1,4-Dioxane, Formaldehyde, Hydrazine, Perc, Xylenes	
Weaving Mills			
Cotton		Acrylonitrile, Benzene, 1,4-Dioxane, EDC, Toluene	
Synthetics		Acrylonitrile, Benzene, Chloroform, 1,4-Dioxane, EDC, Formaldehyde, Mineral fibers, Perc, Styrene, Toluene diisocyanate	
Wool		Benzene, 1,4-Dioxane, Formaldehyde, Perc	
Woven Fabric Finishing		1,4-Dichlorobenzene	
Yarn & Thread Mills			
Yarn Mills,not wool		Toluene diisocyanate	
Throwing & Winding		Ammonia, Lead, Toluene diisocyanate	
Wool Yarn Mills		Arsenic	
Misc Textile Goods			
Coated Fabrics, not rubberized		Arsenic, Benzene, Cresol, Formaldehyde, Hydrogen chloride, Lead, Perc, Styrene, Toluene, Xylenes	
Cordage & Twine		TCA	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Textile Mill Product'n Mfg (Misc) continued			
Felt goods		Arsenic, TCA	
Paddings & Upholstery Filling		Benzene	
Processes Textile Waste		Formaldehyde	
Tire Cord & Fabric		Ammonia, Asbestos, Benzene, Formaldehyde, Perc	
Cleaning - see Degreasing, Appendix C-I and Dry Cleaning, Appendix C-II			
Combustion Processes - see Combustion, Appendix C-I			
Dyeing - see Chemical Mfg and Dyeing of Textiles, Appendix C-II			
Surface Coating/Solvent Use - see Solvent Use, Appendix C-I			
Tobacco Mfg			
Cigarette Mfg		Benzene, Chloroform, Formaldehyde, Methylene chloride, Perc, Toluene	
Tobacco Stemming & Redrying		Benzene	
Toy & Sporting Good Mfg			S-CMB
Dolls		Acrylonitrile, Toluene	
Games, Toys, & Children's Vehicles		Styrene, Toluene	
Sport & Athletic Goods		Perc, Styrene, Toluene	
Combustion Processes - see Combustion, Appendix C-I			
Degreasing/Surface Coating - see Solvent Use and Other Processes, Appendix C-I			
Labeling/Packaging - see Printing and Wood (Paper) Products, Appendix C-II			
Also see - Metal, Rubber, and Wood Products, Appendix C-II			
Train Mfg/Rpf - see Transportation Equipment, Appendix C-II			
Transfer, Storage, & Disposal Facil'e (TSDFs)			
Combustion Processes - see Combustion, Appendix C-I			
Other Processes - see Other Processes, Appendix C-I			
Solvent Recycling - see Solvent Use, Appendix C-I			
Storage - see Liquid Storage & Transfer, Appendix C-I			
Transportation Equip Mfg/Rpr		Hydrogen chloride, Methylene chloride, Perc, Toluene, TCE	S-CMB
Auto Repair/Auto Body Repair Gen'l Auto Repair		Ammonia, Asbestos, Formaldehyde, Toluene, TCA	
Tire Retreading & Rpr		Toluene	
Paint Shops		Benzene, Naphthalene, Toluene, Xylenes Zinc Oxide	
Top & Body Rpr Shops		Naphthalene, Toluene	
Motor Vehicles & Car Bodies		Ammonia, Cadmium, Chromium, Formaldehyde, Hydrogen chloride, Lead, Methylene chloride, Phenol, Toluene	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Transportation Equip, Auto Mfg/Rpr, continued			
Motor Vehicle Parts & Accessories		Ammonia, Asbestos, Benzene, Cadmium, Chlorine, Chloroform, Chromium, Copper, Formaldehyde, Hydrogen chloride, Hydrogen sulfide, Lead, Manganese, Methylene chloride, Naphthalene, Perc, Toluene, Toluene diisocyanate, TCA, TCE, Zinc, Zinc oxide	
Truck, Camper, Trailer, & Bus Bodies		Chromium, Methylene chloride, Nickel, Styrene, Toluene	
Auto Parts Mfg			
Brake lining Mfg		Asbestos	
Aircraft & Parts		Ammonia, Chromium, Hydrogen chloride, Hydrogen fluoride, Hydrogen sulfide, Lead, Methylene chloride, Nickel, Perc, Styrene, Toluene, TCA, TCE, Xylenes, Zinc, Zinc oxide	
Guided Missiles, Space Vehicles, & Parts			
Guid Mis Spc Veh		Formaldehyde, Hydrazine, Perc, Toluene, TCE, Xylenes	
Spc Propulsion Units & Parts		Hydrazine, TCE	
Spc Veh Equipment		Ammonia, Hydrazine, Hydrogen chloride, Lead, Methylene chloride, Toluene	
Motorcycles, Bicycles & Parts		Toluene	
Railroad Equipment		Ammonia, Chromium, Hydrogen chloride, Methylene chloride, Nickel, Toluene, Toluene diisocyanate, TCA	
Ship & Boat Bld & Rpr		Asbestos, Hydrazine, Methylene chloride, Phenol, PCBs, Styrene, TCE	
Combustion Processes - see Combustion, Appendix C-I			
Degreasing - see Solvent Use, Appendix C-I			
Metal Forming - see Machining and Metal Smeltere, Appendix C-II			
Military Transport - see Military, Appendix C-II			
Paint Preparation - see Chemical Mfg, Appendix C-II			
Research - see Research & Development, Appendix C-II			
Space Transport - see Space Research & Technology, Appendix C-II			
Storage & Handling - see Liquid Storage & Transfer, Appendix C-I			
Surface Coating/Touch-up - see Solvent Use and Other Processes, Appendix C-I			
Upholstery Mfg - see Textile Mill Prod Mfg, Appendix C-II			
Transportation Equip Sales			
Boat Dealers		Toluene	
Used Car Dealers		Toluene	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Transportation Ports/Stations			
Airports & Flying Fields		Benzene, Dioxins, PAHs, Radionuclides, Toluene	
Inspection & Weighing		EDC, Lead, Methylene chloride, Perc, Toluene, Toluene diisocyanate, TCA, TCE, Xylenes	
Marine Cargo Handling			
Combustion Processes - see Combustion, Appendix C-I			
Degreasing/Paint Stripping - see Solvent Use, Appendix C-I			
Electroplating - see Metal Plating, Appendix C-II			
Refueling - see Other Processes, Appendix C-I			
Truck Mfg - see Transportation Equipment, Appendix C-II			
Universities - see Colleges, Appendix C-II			
Varnish Mfg - see Chemical Mfg, Appendix C-II			
Water Treatment - see Other Processes, Appendix C-I			
Wood Combustion - see Combustion, Appendix C-I			
Wood Preservation	Gaseous and aerosol releases from: wood preserving agents		S-CMB
Cellon Process		Arsenic, Benzene, Chloroform, Chromium, Copper, Cresols, Dibenzofuron, Dioxins, Hydrogen chloride, Phenol, Naphthalene, Toluene, Zinc, Zinc Oxide	
Chromated Copper Arsenate Process			
Drioon Process			
Diluent/Creosote Process			
Oil/Penta Process			
	vapor drying agents	various solvents	
	preserving carriers	various solvents	
	fire retardents	Formaldehyde, Zinc chloride	
Combustion Processes - see Combustion, Appendix C-I			
Wood Chemicals Mfg - see Chemical Mfg, Appendix C-II			
Wood Products Mfg.	Miscellaneous		S-CMB
Fiberboard Mfg.		Cresols, Formaldehyde, Dioxins, TCE	
Lumber		Chloroform	
Millwork, Plywood, & Structural Members		Cresols, Formaldehyde, Dioxins, TCE, Toluene	
Millwork			
		Asbestos, Carbon tetrachloride, Chlorophenols, Formaldehyde, Methylene chloride, Toluene, Xylenes	
Wood Kitchen Cabinets		Methylene chloride, Naphthalene, Styrene, Toluene, TCA, Xylenes	
Hardwd Veneer/Plywd		Formaldehyde, Perc	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Wood Product Mfg continued			
Paper & Allied Prod Mfg			
	Gaseous/aerosol/particulate releases including but not limited to:		
	From: Sizing agents	Acrylamide, Styrene	
	Wet & dry-strength agents	Epichlorohydrin, Formaldehyde	
	Adhesives	Acrylamide, Ammonia	
	Dyes & pigments	Benzidine, Direct Black 38, Direct Blue 6 Lead, o-Tolidine	
	Binders	Styrene	
	Pigment fillers/coatings	Asbestos, Styrene, Zinc, Zinc Oxide	
	Humectants	Formaldehyde	
	Coatings	Ammonia, Sodium hydroxide	
	Oil-resistant additives	Fluorochemical chrome complex	
	Machine operating aids		
	Retention aids	Asbestos, Epichlorohydrin	
	Biocides & slime cont'l	Acrolein, TCA, Trichlorophenol	
	Deinking agents	Sodium hydroxide	
	Bleaching chemicals	Ammonia, Chlorine, Chloroform, Chromic sulfate, Methanol, Sodium hydroxide, Zinc	
	From chemicals imported in waste paper: ink pigments, coating agents, binders, adhesives -	Chloroform, Phenol, Toluene	
Bldg Paper & Board Mills		Ammonia, Asbestos	
Deink Fine & Tissue Paper, Secondary Fiber Mills		Chloroform	
Paper Mills Misc		Arsenic, Cadmium, Chlorine, Chloroform, Hydrogen sulfide, Toluene, TCE	
Paperboard Containers & Boxes Mfg			
Corrug. & Solid Fiber Box		Ammonia, TCE	
Folding Box		Formaldehyde	
Sanitary Food Containers		Acetaldehyde, Ammonia, Toluene	
Fiber Cans, Drums, etc		Ammonia, Toluene	
Set-Up Box		Toluene	
Paperboard Mills		Cadmium, Chloroform, Formaldehyde, Toluene	
Converted Paper Prod			
Die-Cut Paper & Board		Toluene, TCE	
Paper Bags		Acetaldehyde, Ammonia, Formaldehyde, Hydrogen chloride, Methylene chloride, Naphthalene, Perc, Toluene, TCA	
Pressed & Molded Pulp Goods		Zinc	
Miscellaneous		Ammonia, Formaldehyde, Toluene	

Industry/ Emitting Process	Type(s) of Emissions/ Emitting Process Points	Some Specific Substances (Including, but not limited to)	Supplemental Process Parameter Reporting Form(s) to Use
Wood Prod Mfg continued			
Pulp Mill Mfg			
Groundwood/Mechanical Pulp Mfg			
Chemical Pulp Mfg		Ammonia, Calcium, Carbon, Caustic soda, Sodium sulfate, Sulfur dioxide	
Dissolving Pulp			
Kraft or Sulfite		Chloroform	
Sulfite Papergrade Pulp		Chloroform	
Deink Fine & Tissue Paper		Chloroform	
Pressed & Molded Pulp Goods		Zinc	
Miscellaneous		Chlorine, Chloroform, Hydrogen sulfide	
Also see - Paperboard, Coarse Paper, Tissue Paper, Appendix C-II			
Plywood Mfg		Cresols, Dioxins	
Pressedwood & Laminated Wood Products Mfg		Phenol-formaldehyde resins - Formaldehyde, Phenol	
		Melamine-formaldehyde resins - Formaldehyde	
		Dispersion agent (during glue formulation) - Sodium hydroxide	
		Formaldehyde scavengers - Ammonia	
Sawmills & Planing Mills		Acetaldehyde, Formaldehyde, Lead, PAHs, Toluene	
Hardwood Dimension & Flooring		Toluene	
Softwood Veneer Mfg		Cresols, Dioxins	
Wood Containers		Toluene	
Wood Furniture Mfg			
Wood Finishing		Chromium, Methylene chloride, TCA	
Combustion Processes - see Combustion, Appendix C-I			
Surface Coating - see Solvent Use and Other Processes, Appendix C-I			
Wool Fabric Mills - see Textile Mfg			
All Other Industries	Gaseous releases from combustion, storage, handling, process vessels, etc	feedstocks that are on list of substances or may contain listed substances as substances.	
	Particulate and aerosol releases from combustion, storage, handling, process vessels, etc	Check all materials manufactured for components that on listed substances	
	Process loss and fugitive releases anywhere along the process train		